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ABSTRACT

Based on the findings of a comprehensive survey of Hawaii's public school system, educational specifications are presented for the Hahaione Valley area elementary schools. The educational specifications are organized into separate sections for each subject area. (FS)

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EDUCATIONAL SPECIFICATIONS

Developed from

The Program Delineation Study

January - April 1961

for

HAHAIONE ELEMENTARY SCHOOL

This project was made possible by a grant to the Department of Education by the Educational Facilities Laboratories, Inc., coordinated by the Western Regional Center at Stanford University and implemented by Dr. Deal Crooker and staff.

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PREFACE

The Department of Education of the State of Hawaii has been extremely fortunate in recent years to have had a happy combination of factors which have made it possible to explore and implement new and better ways of carrying out its instructional program and designing and constructing better school facilities. This has been coupled with the good fortune of having members on the Board of Education who had confidence in the professional staff and gave approval for the exploration and implementation of new programs and designs which would insure quality education. The enthusiasm and willingness of the professional staff members on the state, district and school levels have also been a tremendous force in improving the instructional program and the implementation of newer techniques of teaching, staff utilization and the use of newer teaching aids. These, then, have been the major factors in bringing about a climate for change and improvement.

The comprehensive survey of Hawaii's public school system by Dr. William Odell and Associates pointed out existing problems and recommended solutions which would greatly improve the Department of Education. More recently, men like Dr. Lester Nelson, Dr. Alvin Eurich, Dr. Lloyd Trump, Dr. Finis Engleman and other nationally known educators have become interested in the rich potential of Hawaii breaking new grounds in educational advancements. Dr. Harold Gores, President of Educational Facilities Laboratories, Inc. and Dr. James MacConnell of Stanford University and Western Regional Director, E.F.L., have been instrumental in getting E.F.L. funds for breakthrough in school facilities construction in Hawaii. These funds will provide studies for an elementary school in Hahaione Valley, Hawaii Kai and a high school in the Pearl Harbor Heights development.

INTRODUCTION

The public school system in Hawaii began soon after the arrival of the missionaries from the New England states in 1820. The public school system has made tremendous strides in the past several decades. Today, it compares favorably with the better systems in operation throughout the nation. Education has enjoyed and will continue to enjoy a high status among the people of Hawaii. With the establishment of the East-West Center at the University of Hawaii, education will take on greater meaning, not only with the people of Hawaii but with the peoples of Asia.

Hawaii, because of its strategic location in relation to countries in the Pacific rim and Asia, is destined to play an increasingly vital role in the new frontier of education. Ferment in world affairs today makes this role, however difficult, more challenging and more urgent.

The role the Department of Education will play in its effort to better interpret American public education to the peoples of Asia is a vital one. Therefore, the Department of Education can no longer remain content and secure in the crystallization of the formal, traditional and stereotype curriculum and teaching methods of the past several decades. It must be cognizant of the rapid changes being brought about in the field of education. It must keep abreast with the major breakthroughs which are taking place in many sections of continental United States. It must embody the latest thinking in educational philosophy, better instructional methods and greater staff utilization. It must implement the latest ideas in school architecture and better construction techniques of school facilities. If these can be accomplished, then Hawaii's public schools can become the showcase and the pattern of better schools of tomorrow.

To Hawaii's schools, then, can come the educational leaders of the countries of the Pacific rim, Asia, South America and Africa, to observe and study the latest educational practices. They can take back with them the newer concepts of American education and by proper application could help their countries "leap frog" by several decades in the implementation of desirable and tested educational concepts and methodology.

The Department of Education has undertaken, during the past several years, several major activities to upgrade its instructional program. The major emphasis has been in the following areas:

1. The development of the Scope and Sequence of Hawaii schools curriculum.

   The development and publication of program guides in Physical Education, Art, Music, Guidance and Counselling and the Language Arts.

3. The development and publication of a state-wide Educational Specifications and Building Guides.

4. The School Self-Study Evaluation Program for the improvement of instruction.

5. The implementation of many recommendations of the Odell Survey.

6. The exploration and study of team teaching, ungraded elementary, better staff utilization, newer teaching aids and instructional television both open and closed circuit.

7. State-wide elementary and secondary school principals' conferences.

8. The Curriculum Instructional Improvement Program for all school districts.

The foregoing efforts were concrete evidences of the Department's desire for improvement and change to meet the newer educational needs as demanded because of changes in today's world. Another activity which demonstrated the Department's readiness and willingness to move ahead was the state-wide Program Delineation Study set up jointly by the Department of Education and Educational Facilities Laboratories.

The Program Delineation Study mobilized the state and Oahu district curriculum specialists and selected principals and teachers to study, discuss and gain new insights in the newer educational methods. Also participating in the

Study were several staff members of the College of Education of the University of Hawaii, representatives from private and parochial schools, the P.T.A. and the press.

The first week was devoted to an over-all orientation period to the newer educational methods. Reports were given by members of the University of Hawaii's Team Teaching Observation group, E.F.L. Director's study of the newer schoolhouse construction, demonstration of closed circuit instructional television, staff utilization patterns, newer trends in audio-visual education, and the "live science" program.

Following the orientation period, nineteen subcommittees representing the major subject and program areas began an intensive study to see the major possible utilization of the newer concepts presented to them. The subcommittees submitted their reports to the Elementary and Secondary Program Delineation Study Committees. It was, then, the responsibility of these two major committees to develop patterns for initiation and implementing the newer instructional program for the State of Hawaii.

During the final week of decision making, the assistance of outstanding mainland consultants were made available by the Educational Facilities Laboratories. Dr. Robert Anderson of Harvard University, Mr. Harold Howe II, Superintendent of Schools in Scarsdale, and Dr. James D. MacConnell of Stanford University came to assist the study committees in their final endeavor to develop the elementary and secondary programs which were to form the final basis for the new educational specifications.

Paralleling the Program Delineation Study, a school planning workshop was conducted under the sponsorship of the City and County of Honolulu, Educational Facilities Laboratories, Inc., and the Department of Education. The main purposes of the workshop were:

1. Presentation of the new educational trends, their emphasis and effect on schoolhouse construction. This presentation was most ably done by Dr. Robert Anderson and Mr. Harold Howe.

2. Presentation of newer construction materials and economical techniques in construction. Dr. Gilbert Olson, consulting engineer for Hawaii Kai, served as speaker and consultant on this subject.

3. Reports on schools recently planned and constructed on the mainland which were embodying the latest concepts in educational trends. Reports and observations were made by Dr. James MacConnell, Masaru Tsugawa and James T. Okamura.

The Honorable Neal S. Blaisdell, Mayor of City and County of Honolulu, in the keynote address at the workshop stated:

"The State Governors' conference last summer (1960) conducted a symposium on educational needs and came to this central conclusion: that educational crisis is not entirely one of finances, but is chiefly a condition of out moded techniques and curricula.

Specialists at this workshop today are presenting the newest ideas in teaching, in utilization of television and audio-visual aids, and in the types of school buildings needed to carry out these programs.

With cooperation between all the agencies involved in the school construction program, we can give Oahu the educational facilities it needs to carry out its great responsibility as one of the most enlightened places of the world."

RECOMMENDATIONS OF THE PROGRAM DELINEATION STUDY

The recommendations developed by the elementary and secondary committees of the Program Delineation Study were submitted to the Commissioners of Public Instruction by Dr. Deal Crooker in April 1961. The Commissioners accepted the recommendations of the Program Delineation Study groups and granted approval to implement the recommendations in the planning and designing of the two new schools, one in Hahaione Valley and the other in the Harbor Heights area.

The summaries of the Elementary Committee's recommendations, which worked very closely with the elementary schools, made clear the need of:

1. Teacher training program for elementary teachers in order to make possible the adaptation of newer educational concepts and methods especially in the areas of educational TV, team teaching, better staff utilization, elimination of grade concepts, and increased use of audio-visual media.

2. Program modification whereby more teachable groups could be developed. This could envision large group instruction, greatly in excess of the usual 32-1, pupil-teacher ratio and other groupings of less than 32 students per teacher. New professional classification was also indicated--the teacher assistant or paraprofessional.

3. Educational experiences of boys and girls to be planned and implemented by teams of teachers whose competencies and skills are mutually complemented.

4. Developing attitudes and creating desirable climate in the new schools which will foster implementation of new programs and a willingness to continually move forward in the search of newer methods to insure quality education.

The Secondary Committee strongly recommended that the new high school incorporate the following:

1. Team teaching--a promising and emerging approach to effective teaching and learning in subject areas that lend themselves to team teaching, thereby making optimum use of staff competencies and interests.

2. Non-Teaching period each day. Time to allow team members to plan and to prepare instructional material.

3. Modified program schedules. This will provide flexibility in student programming. This departure from standard schedules would mean:

    a. Students might not meet a period a day, five days a week, but might meet three times a week, every other day.

    b. Regrouping of students to provide time for large and small group instruction, as well as time for individual study.

    c. Programs to make possible for students to have variety of experiences appropriate to their needs, interests and abilities.

4. Instructional aids. The extended use of instructional aids

including open and closed circuit TV and teaching machines.

5. Teacher assistants and clerks. Help of non-professional nature to relieve teachers of routines such as policing, roll taking, correcting papers, preparing demonstration materials, setting up and taking down equipment and other similar duties which prevent teachers from teaching.

6. Modification of room design. Improve the present inflexible rectangular classrooms. Provide large group instruction areas.

ELEMENTARY EDUCATION - AREA OF INSTRUCTION

ART

I. Classroom organization recommended for the Art Program.

1. Specifications

    a. Classrooms (large)
    Audio-visual equipment
    Easels (a few)
    Cart (movable) to get supplies from stock storage
    Cupboards for supplies
    Work Bench, drying racks
    Strong, light weight furniture
    Movable walls between classrooms

    b. Art Center (workshop) including conference room
    Audio-visual equipment
    Equipment for various art areas (painting and crafts) including space for ceramic kiln to allow children a choice of activities

    c. Display Areas for Art Work, permanent and temporary
    Classroom, art center, halls or corridors, multi-purpose room

    d. Multi-purpose Rooms
    3 for 800 children
    Movable walls make this possible
    Equipment: overhead projector, 16 mm. film projectors, slide and filmstrip projectors, tape recorder, large wall screen, rostrum, P.A. system, microphone (around neck and stationary), television set and record player

2. Scheduling of Teachers (flexible)

    a. 3 Art Specialists
    Work with homeroom teachers of Grades K - 6 in teams planning for large group sessions, small group sessions including correlation, and scheduling of Grades 3 - 6 for work in the art center
    Work with gifted in art center

    b. 25 Classroom Teachers
    Work with art specialists in homerooms
    Teach art to own class if strong in art and/or able to inspire children in creative art activities

    c. 3 Intern Teachers (majors in art)
    Work with art specialist where needed either in a homeroom or in the art center
    Assist in care and distribution of equipment and supplies

3. Scheduling of Children (flexible)

   a. Grades K - 2 remain with homeroom teacher
      Art activities in classroom
      Large groups in multi-purpose room for puppet-shows, plays, programs, and appreciation of art through television or colored slides

   b. Grades 3 - 6 remain with homeroom teacher for core subjects

      Art activities in classroom (limited)
      Art activities when scheduled to art center (all or part of class)
      Gifted scheduled to art center

II. Activities and teaching methods best suited to carry out the Art Program.

1. Team Teaching

   a. Art specialists and classroom teachers as a team plan art areas as specified in the Art Guide under "How to Use the Guide", and evaluate the program
      Use art as a living integrating force for enrichment and not as an isolated subject.
      Use art to help children grow in ability to create, think and solve problems and use materials and tools.
      Art for all children with consideration for each child's ability, experience and rate of learning
      Evaluation of art work with children by discussion as explained on pages 12 and 13 in the Art Guide
      All art ungraded

   b. Plan together for large group sessions to be held in multi-purpose room for the following:
      Motivation for a special art activity
      Appreciation of art
      Motivation for correlation of art with other areas of learning such as social studies, science including nature study, music and creative dancing, language arts

2. T.V. Teaching both closed and open circuits
   a. Appreciation of art
   b. Correlation with other subject areas as follows:
      Stories
      Puppet shows
      Science including nature study
      Aviation
      Social Studies including history
      Care of materials and tools

3. Use of Community Resources as an integral part of art education
    a. Honolulu Academy of Arts
        - Appreciation
        - Correlation with other subject areas
        - Demonstrations of art activities
        - School Art Exhibitions
        - Cultural exhibitions of art for all periods in history
        - Staff of Academy as consultants in the new audio-visual program and for the teachers
        - Mobile Unit for exhibits of both two-and three-dimensional art work
        - Use of lending collection

    b. Bishop Museum
        - Study of Hawaii and other peoples of the Pacific
        - Use of the Department of Education liaison teacher
        - Use of museum in miniature

III. Audio-visual and other teaching equipment requiring classroom space and space in the art center.

1. The following are needed for the art center and for the classrooms:

    a. Equipment
        - overhead projector
        - 16mm film projector
        - slide and filmstrip projectors
        - tape recorder
        - opague projector
        - large wall screen
        - rostrum (portable)
        - P. A. System
        - Microphone
        - T.V.
        - Record Player

IV. Materials and equipment which could be shared with other classes.

1. Central storage for an adequate collection of films (unless a state pool is provided), slides, filmstrips and reproductions of art
2. Stock storage next to art center for supplies for both two and three-dimensional activities

V. Desirable outcomes and strengths as an outgrowth of the Art Program proposals.

1. Accomplishment of the following objectives on p. 7 of the Art Guide as follows:

    a. The outstanding function of a program of art education for all young people must be to assist them to arrive at a well-balanced creative, intellectual, physical, moral, spiritual, emotional, and social maturity. In order to achieve this end, the art program should function as follows:

Provide opportunities for building spiritual values by fostering artistic development.
Encourage creativity by providing opportunities to express and create.
Develop greater powers of detailed observation and visual judgment.
Help pupils to develop self-awareness, self-direction, self-confidence and a sense of responsibility.
Help all pupils to achieve their highest potentials.

ART PROGRAM FOR GRADES 7 and 8

1. Use same program as for Grades 3 - 6. Keep these grade levels exploratory including drawing, painting and crafts.
    a. Spend less time in core and more time with specialists than in Grades 3 - 6.
    b. Take responsibility for self-direction in preparation for years to come in high school.

FAMILY LIVING

Education about the family to help each individual develop an understanding of his responsibilities as a home member should begin early in a child's life. Family Living in the elementary school could strengthen ties between the home and school.

There is a definite growth in the direction of incorporating Family Living in the elementary school curriculum throughout the nation. Many states have an on going program of Family Living in the elementary schools.

Some over-all objectives of the program might be stated as follows:

To show the boys and girls how they can share in Family Living

To help them gain in independence in such areas of living as personal care and care of their own possessions

To help boys and girls grow in ability to get along with others in their homes, in the community, and in the school by teaching them to be thoughtful and appreciative of others

To provide an opportunity to practice good social behavior

To provide an opportunity to work together in groups toward a common goal

To help them acquire skills, commensurate with their ages, in the performance of some household tasks

To give them information about the care of young children that will enable them to assist in the care of younger brothers and sisters

To enrich the classroom experiences of boys and girls

Scheduling in schools with homemaking facilities:

At the beginning of each school semester, the homemaking teacher places her schedule on the bulletin board in the school office. This schedule indicates the periods available when teachers from kindergarten to grade 6 may bring their classes to the homemaking department. Within a few days the schedule is completed by the classroom teachers. There will be one or two who have no interest in bringing their classes to the homemaking department, but in the majority of the schools 100 per cent of the teachers respond enthusiastically to the program. Some classes may come to the homemaking room only one morning a semester, while other classes may come as many as three or four times a semester.

The grade teacher and the homemaking teacher work together in planning units in this home and Family Living program.

Scheduling in schools without homemaking facilities:

Homemaking teachers can also work with the elementary teacher in regular classrooms. For instance, a homemaking teacher may serve in one elementary school for 3 days of the week. Then two days each week, she may go to another elementary school. Another possibility might be to use a regularly assigned homemaking teacher in a secondary school offering homemaking on a part-time basis to serve an elementary school in the vicinity on a regular schedule. Naturally this program is somewhat limited in that the equipment available may not necessarily be complete.

Another possibility would be to use the homemaking consultant to give specific instructions to the elementary school teachers in order that elementary classroom teachers would handle the actual teaching of the Family Living education objectives.

Facilities and Equipment:

In an elementary school where a multi-purpose room is to be provided for such activities as industrial arts, art, and family living, certain permanent equipment could be installed --

2 compartment sink with hot and cold water outlets

1 apartment-size range

1 9 cu. ft. refrigerator-freezer

1 portable electric sewing machine

1 portable ironing board
1 electric ironing board
1 electric mixer

1 electric blender

All other small utensils that are necessary to carry out the objectives as stated above.

For elementary schools where the multi-purpose room is not available and the activities of this program must be carried within a regular classroom, the following are possible facilities that could be provided:

A self contained portable unit on casters that include the sink, cooking units, refrigeration units and storage space for the other portable appliances and utensils.

A set of instructional kits that would include only small portable appliances could be developed to accompany the traveling teacher or consultant. These kits could be duplicated so that a set can be assigned to a school. To use this kit effectively, the room in which the group meets should have electrical outlets and sinks.

Problems in Implementation:

The expenditures necessary to start this program will include equipment and supplies as well as increased personnel to provide either consultant service to the classroom teacher or traveling homemaking teachers.

FOREIGN LANGUAGES

The following recommendations for the elementary and secondary education in the area of Foreign Languages are made with fall 1963 as an operational target date.

I. Staff Utilization

A. The chief school administrator responsible for instruction should be the "CURRICULUM AND INSTRUCTION DIRECTOR" whose responsibilities will be all those which are implied by the title and whose rank and salary will be at the top level of the school organization. All those business managements and other duties related to the mechanical operation of the school ordinarily performed by the school principal will be the job of the "SCHOOL MANAGER" whose rank and salary will be at the same level of the Curriculum and Instruction Director. Together these two people will make up the ADMINISTRATION TEAM. All clerical and business duties ordinarily performed by the present vice principal will be handled by a "para·administrator" whose salary and rank will be at the third level. The second level position will be held by the ASSISTANT CURRICULUM AND INSTRUCTION DIRECTOR who will also be a part of the "administrating team." A curriculum and instruction council will include department or grade level chairman as regular members with counselors and special services staff members participating as desired. The Curriculum and Instruction Director is the chief administrator in all matters related to curriculum and instruction and as such is responsible for all final decisions in these matters. The Curriculum and Instruction Director will coordinate all related activities with the school district Curriculum and Instruction office which in turn will work with the state Curriculum and Instruction division. Department and grade level chairmen must receive a salary differential which is motivational and commensurate with their responsibilities.

B. Teacher-Specialists

Using foreign language as an example, these are teachers with a special subject competence who may work in more than one school such as the traveling teacher-specialists in Frontier Project Asian Languages, Elementary Schools and the traveling teacher-specialist who will be teaching Russian language in two or more secondary schools, fall 1961. In addition, the specialist may remain on one campus, teach the necessary periods in the area speciality and serve as a team-teacher consultant for other areas. An example of this would be the Hawaiian language teacher in one of our high schools who teaches Hawaiian language classes part of the day and during other portions of the day serves as a Hawaiian culture specialist working on units of study to be presented in regular social studies classes, English and speech classes, music and art classes. These units of work are developed by the specialist and the regular classroom teacher. The main body of special interest is very often presented by the specialist with the specialist and classroom teachers serving as a team in sub-group activity. It is obvious that not only are the students having an opportunity to learn but this is customized inservice training for the regular classroom teacher as well. In the elementary schools program, it is the attempt of the traveling teacher-specialist to teach classes of students as needed, and in subsequent years as the regular classroom teacher is able to carry on, to allow her to do so. At no time will the specialist leave the school to handle its own program completely. When a school is ready to operate independently the specialist is free to work in other schools much of the time but still continues to visit and even give specific instruction on occasion. This is a semi-supervisory position and deserves motivational and commensurate salary differential.

II. Equipment

A. Learning Machines

There is no question that learning machines can serve a fine purpose for specific kinds of skill development and certain information memorization. Generally speaking, since language is a living, vibrant, dynamic, elastic, ever-changing manifestation of human life, over-mechanization of instruction will defeat the very aim of that instruction--HUMAN UNDERSTANDING. Examples of specific application of proto-type learning machine in language might very well be in intensified and increased acquisition of reading vocabulary such as advanced Chinese or Japanese literature. Where deemed advisable, reading speed could be increased perhaps through such machines. Caution: Grammar is essentially a formalized analysis of a language. Though we frequently hear people speaking of rules of grammar, in almost all cases the spoken language and its extensive development precedes someone's structured analysis of how that language operates. In other words, you can't analyze something until you have it. This is the basis for the present trend in American language instruction to develop a foundation in the listening and speaking language followed by reading and writing, and in advanced phases, an analysis of the language. Therefore, it is sort of ridiculous to think of learning rules of grammar and then memorizing bilingual word equivalents and then attempting to put words into certain sequences according to memorized rules with the assumed result that one can use the language. It is probably true that a mechanical learning machine can help a student memorize rules of mechanics of a language. For example, the rote memorization of conjugations and declensions could undoubtedly be facilitated through the machine.

B. Advanced Learning Machines

Undoubtedly a $5000 single student installation could be developed to include everything but the protoplasm and it would be of great value as a non-human tutor ("...like a kiss over a telephone.") But when the time comes that people think of spending $5000 for each student in a 30 pupil classroom, we will be in a good position to consider better possible utilization of such quantity of money.

C. Audio Equipment

1. The Tape Recorder

The audio tape recorder is the teaching-learning machine for language instruction. Every language classroom today must have a record player and a tape recorder. There should also be provisions made for listening through earphones for at least half of the class. Though there is advantage in having the wiring for listening built into wall installations, yet, with each degree of immovability of equipment comes a loss of flexibility in terms of classroom activity. The value of such a system as the Classroom Audio System now in use in Hawaii is that it allows the teacher to move desks, chairs, tables to any part of the room for any type of sub-group activity and be able to set up listening position in any place he wants. At the same time two to five low-cost tape recorders may be placed in a specific area of the room where students may use these instruments for individual work in listening and speaking as well as other skills combined. Again, as these tape recorders may desirably stay in one place nevertheless they may be moved about anywhere in the room where different positioning is desired.

A portable battery operated tape recorder should be available to every classroom teacher when needed for the purpose of making "on location" live situation recordings of materials to be used in the classroom. Such equipment might easily be made available to a student or students for special projects. For example, a student might record a foreign language conversation held in his home with a grandparent. The Classroom Audio Center System provides simple patch cord for recording from the midget tape recorder onto the regular tape recorder or from the record player into the tape recorder or any other combination. The large loud speaker of the record player with its own amplification system allows for full-scaled use of any recorded material played loud enough to fill an auditorium.

Provisions should be made for tape recording automatically, through the use of a timer, any radio or TV programs which may provide useful learning material that was broadcast during non-school hours. Such a system is relatively inexpensive and can provide wonderful class content ordinarily lost. (It is one thing to ask students to "be sure and listen to such and such TV or radio program, tonight" and another thing to have it on tape for careful classroom study with as much repetition as needed and listen to it at any time desired.)

2. Video-audio Tape Recorder

Though this is not yet available at a practical cost for school use, within a few years a video-audio tape recorder at a reasonable price will be ready for use by creative educators. In the opinion of the Director of Foreign Languages, when this occurs the Curriculum and Instruction Director of every school will find at his disposal a "faculty" tripled or quadrupled that of his existing staff. The only machine which will provide a still great "breakthrough" will be the portable battery operated video-audio tape recorder of the future.

D. Video Equipment

1. For regular classroom situations a slide and filmstrip projector should be part of standard classroom equipment

along with necessary screen and shading devices. These should be mechanically operated -- that is, automatic controls which would allow either manual or tape recorded in audible activation. Such equipment is now available at low cost.

2. The present overhead projectors are not necessary for every class. It is suggested that one for every two or three classes be constantly available so that material which could not be presented live at the blackboard might be presented through the overhead projector.

3. The present opaque projectors have serious limitations which make their frequent use questionable. Specifically, these problems include intensification of light, inability to handle easily, materials of various sizes and shapes and necessity for moving the machine itself in order to maintain full-size image on the screen. It is incumbent upon educators who are consumers for such equipment to insist upon improvement in certain equipment such as this machine.

4. A film projector with facilities for recording the teacher's own audio material should be available to every three teachers any time they wish it.

E. TV Receivers

Various serious attention should be given to the psychological, health and emotional problems involved in having too many students view a small screen (the use of the television receiver in the classroom is not merely for entertainment).
As a guide one could think about the number of people who ordinarily view a program at home on screens of the same size. Rather than invest in too many television receivers in the quantity which would be needed and desirable for a good learning situation in a regular classroom, serious consideration should be given to the purchase of devices which will project the television signal on a regular-sized classroom movie screen, or through a blackout box of great size. These are now available but require further development--demand from educators would speed up the process greatly!

PROGRAM FOR THE GIFTED

A. General Introductory Statement

1. Innovation and change in education enjoys validity and success only insofar as it derives from basic considerations of the child's happiness, general welfare and individual accomplishment.

2. "New trends" in education need to be considered in light of the full implications of subtle concomitants of mass education techniques in terms of human complexity and inherent individual variability.

3. The most important single determinant in education for excellence is the quality and training of the teacher. All programming must be instituted to supplement and enhance the genius and devotion of the masterful teacher.

4. The most vital, significant and lasting facet of the academic learning process is the human relationship between pupil and teacher. Operational designs in education should seek to preserve and strengthen such relationships.

5. Any alterations in basic design and structure of education should involve preliminary study in real depth and must proceed from professionally conceived objectives based upon our social heritage, cultural values and human aspirations.

6. Extrinsic designs and the enroaching "technocracy of education" must be maintained in healthy perspective and relationship to established objectives and instrinsic functions of masterful teaching.

7. Major alterations in current operational procedures in the public schools should reflect the preferences and enjoy a continuing majority support of the parents, the citizenry, the pupils and professional personnel involved.

8. "Newer" trends and media now on the educational scene must be judiciously appraised and reappraised from all aspects to determine in each case whether claims purporting to further the uniqueness and creativity of the individual are true and valid. It is recognized by many that employment of mass media and impersonalized procedures in education presents a danger, both obvious and insidious, that genuine individualism, independent thinking and creative expression could be thus further submerged, in the ranks of both pupils and teachers.

9. Significant alterations in existing programs of education should not be implemented unless deemed sufficiently valid and desirable to receive financial support adequate enough to assure reasonable opportunity for success of the endeavor. Such alterations should

enjoy a period of favorable evaluation in thoroughly considered pilot programming before being extended to the entire field.

10. Acceptance of substantial financial assistance for public education from the coffers of private enterprise incurs the traditional risk of progressively devitalized initiative and effectiveness of local public effort, and of subtle controls, inevitably associated with money grants, which could eat away at the founding philosophy and concepts of public education in America.

11. In terms of a "creative look ahead" and "doing violence" to status quo operations in the DE, it is incumbent upon all EFL study participants to thoughtfully consider what highly promising improvements might eventuate if existing procedures and patterns were revitalized and augmented by completely renovated teacher training programs, reduced pupil-teacher ratios, teacher aides and preparation periods, improved facilities, curriculum differentiation and other long-overdue essentials. Let's not overlook the desirability and possibility of bringing some of this to pass even if it needs to be under the guise of "new trends" and a major "study" recommendation.

B. In More Specific Reference to Education of the Exceptionally Endowed Pupil*

1. The several trends and media in education presently under study both locally and nationally have been selectively adapted to education of the exceptionally endowed in America's public schools for many years. Among others, these include nongraded advancement, dual progress plans, various versions of team teaching, use of newly available A-V media, small group seminars, value analysis groups, independent directed study and research, curriculum differentiation, schedule modification, and individual programming. The question, then, for these pupils of high level potential and ability, whose education must be in the vanguard of our best thinking and doing in order to prove truly effective, is one of how can the proven provisions be further refined and expanded?

2. As highly defensible and soundly proven modifications of curriculum, methodology, organization, implementation and administration take place within subject area programs and operational design, the atypical individual, in this instance the gifted, stands logically to benefit. The need for so-called "special programs" in education is directly correlated with the inadequacy of existing policy and design to properly accommodate exceptional youngsters in the mass education of youth. Excluding the genius, an ideal system of education could and should cultivate the unique potentialities of each individual within the basic framework of programming and provisions.

3. Curriculum

    a. Curriculum modifications and differentiation essential for exceptional children in most subject areas.

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*Also see attachments: Some Basic Objectives in Educating the Gifted; School Provisions for the Gifted, K-12; Cultivating Creativity in Our Schools.

   b. Rigidity in the curriculum often handicaps teaching of the gifted.

   c. All subject area guides and book lists should include special sections or supplements applicable to exceptional children.

   d. Social Studies curriculum needs revamping to include greater emphasis on major contemporary issues and developments nationally and internationally. Primary curriculum particularly inadequate for the gifted.

   e. Need for careful re-evaluation of sequential reading program for the gifted in terms of rate of progress in basal texts and supplementary reading opportunities.

   f. Broader curriculum opportunities needed for the gifted at all levels. These might include, among others, current events, creative writing, foreign language, junior philosophy, creative art, music and dramatics, and leadership training.

4. Teaching methods and key learning activities

   a. Allowance for and considered cultivation of creative non-conformity and divergent thinking in working with gifted.

   b. Continuous and vital integration of learning in the several subject areas.

   c. Less emphasis on mere accumulation of knowledge and more stress on learning how to think in order to be able to cope creatively with our rapidly changing environment and establish sound new patterns of leadership.

   d. More extensive use of small group seminars and instruction as principal approach to education of the gifted.

   e. Regular blocks of time for individual investigation and research, pursuit of special interests, and developing unique talents and abilities.

   f. Exclusion from unnecessary review, drill, and group instruction in previously mastered concepts and skills.

   g. Greater use of community resources--people, places, activities, facilities--to broaden the learning experience and deepen understanding.

5. School and classroom organization

   a. Grouping of some sort increasingly imperative for full growth and development of exceptional individuals. Should be on a more professionally sound basis than chronological age--one of the least defensible methods.

   b. Pupil-teacher ratio should be lowered for all levels of ability with priority going to the extremes of the normal curve of distribution.

c. Staff Utilization in programming for the gifted must allow time for planning, preparation, pupil, parent and teacher conferencing, and arranging for community resources.

d. Nongraded advancement promising for the gifted, if effectively implemented, as a means of accommodating individual differences in terms of the learning process and rate of advancement. Need not be limited to primary grades. Must be provision for continuity throughout the grades.

e. The several variations of team teaching presently in use by the Program for the Gifted have been favorably evaluated during the past two years and, with minor modifications, will continue in the schools.

Team teaching as presented during Program Delineation Study week entails a consideration of the following as realted to the gifted:

(1) Involves increased capital outlay. Additional money must be channeled into the procurement of finer teachers, reduction of class load, clerical help, etc., to make effective the realization of educational standards of excellence.

(2) Large group instruction will of necessity still be geared to the "average" students.

(3) The gifted (particularly) react unfavorably to being anonymous passive participants in large group activity.

(4) The gifted need masterful teachers in the small group work as much or more than in the large group. Team teaching hierarchy suggests teachers of lesser capability and distinction for most small group and individual experiences.

(5) Originality, creativity and independence of subordinate teachers could be stifled. Need for constant team interplay and relationships could prove distressing to highly creative and sensitive individualist (teacher) and result in inevitable trends toward group conformity and sameness in the teaching process.

(6) Greater specialization among teachers may encourage complacency and discourage continued intellectual growth on a broad front. The "whole child" needs a "whole teacher."

(7) Will not necessarily improve the basics of curriculum and methodology in teaching.

(8) Child's day, particularly at elementary level, could become over-structured in terms of programming--antithetical to natural child development, particularly the gifted person.

(9) Teaching competence in company with verbal facility, ambition, aggressiveness and administrative abilities more likely to be considered in relation to team leader position than simply masterful teaching.

(10) Could be effective for gifted in limited degree if conditions were optimum. (Elaboration on request.)

f. Educational TV

(1) Some potential value for the gifted on occasion, as with most all A-V facilities.

(2) Necessity of directing most presentations to ability and comprehension of the mass reduces value and desirability for gifted segment. Selective viewing essential.

(3) Stresses mass consumption as opposed to individual creative participation and expression (pupil and teacher).

(4) Present six-state simultaneous educational TV programming project opens door on "Brave New World" mass indoctrination and is questionable on numerous counts. (Elaboration on request.) Even local district and/or county viewing raises serious concerns relative to program selection and production to be beamed as mass education (indoctrination vs. intuitive learning).

(5) Is growing emphasis on Educational TV based on basic objectives in education of youth or more on an attempt to deal with critical issues facing the profession?

g. Teaching Machines

(1) Might enable gifted to learn some specific skills and provide for certain drill if needed--somewhat like a workbook, automated and refined.

(2) Automated teaching inimical to nature and capacities of gifted person. Should be minimized and carefully structured.

(3) Programming of machines, necessarily on widespread commercial basis for the most part, must ignore important factor of individual variability.

(4) Teaching machines remove student one more step from vital relationship time, motivation, challenge and stimulation of teacher and fellow students.

(5) Emphasis on facts as opposed to relationships, values, individual needs, attitudes, creative reason and judgment, etc., so important in all phases of educational experience for the gifted.

Summary

No genuinely new trends in education, or earlier practices coming up for re-evaluation in light of contemporary times, should be passed over by educators without a thorough and discriminating consideration relative to the objectives and design of American education today. Nor should the profession be found guilty of "grabbing at straws" and desperation programming based on change for the sake of change or reaction to group pressures and vested interests.

That which has been found professionally desirable and effective in terms of the overall school experience of the child, as based on local pilot studies, and is acceptable to the community, should be intelligently employed in the field. Similarly, the converse should be true.

In the final analysis, we as educators must continually maintain as our principal effort the provision of masterful teachers for all children for every school experience.

* * * * *

> "I believe that teaching [and the education of youth] is an art and not a science...involving emotions which cannot be systematically appraised and employed, and human values which are quite outside the grasp of science. You throw your heart into it and realize that it cannot...be done by formulas or you will spoil your work, and your pupils, and yourself."
>
> Gilbert Highet

SOME BASIC OBJECTIVES IN EDUCATING THE GIFTED

The worth and dignity of man is enhanced in proportion to the fruition and constructive application of his unique potentialities. Such optimum cultivation of human resource may be measured in terms of personal happiness and fulfillment, and the overall improvement of a society and culture.

Consistent with this aim, certain specific objectives may be set forth which apply in varying degree to the education of all youth. Certain of these which prove to be particularly significant in working with pupils of outstanding promise and ability are:

1. To emphasize and encourage creativity and experimentation.
2. To further self-understanding, inner consistency and the ability to deal competently with self and others.
3. To foster a true love of learning and the emergence of high aspirations.
4. To broaden the base of knowledge, deepen understanding, and increase the level of skills.
5. To stimulate initiative, originality, reflective thinking, and investigation.
6. To establish and maintain high standards of performance and accomplishment.
7. To afford opportunities for independent pursuits, firsthand experiences, leadership training and social adjustment.
8. To develop the powers of logical reasoning and sound judgment, including the ability to evaluate oneself.
9. To advance specific interests and aptitudes in order to sustain specialized competencies at higher levels.
10. To cultivate a greater understanding and appreciation of our cultural heritage and the "good life."
11. To motivate the desire to meet the special expectations society has for individuals with unique talents.
12. To encourage a wise and sensible balance in the cultivation and development of body, mind and spirit.

SCHOOL PROVISIONS FOR THE GIFTED, K-12

Perhaps the least controversial commentary on American education in our present era is that most philosophy and action within the profession seems to stimulate healthy controversy! One subject, however, which enjoys a remarkable degree of consensus among educators is the concept of individual differences and the importance of properly providing for the potential and ability of each and every pupil.

But here much of the harmony and agreement ends. Just how these individual differences can and should be accommodated is a matter which has inspired considerable professional and non-professional expression and widespread experimentation in the field. Many of these commendable attempts within the schools of our Nation to sincerely provide a more individualized approach to the education of youth have stood the test of time as practical effective measures. Out of this growing body of knowledge a number of sound and helpful ideas have emerged which are of marked significance for exceptionally endowed youngsters; endowed in terms of intellectual ability, unusual creativity and special talent.

The accompanying chart represents a compilation of those provisions for such individual differences which have proven most feasible and purposeful for administrator, teacher and child in terms of existing educational design and facilities. The indication of grade levels at which the various provisions might best be implemented is in no way meant to be conclusive. It is intended to serve simply as a guide to be flexibly interpreted consistent with the many factors which each principal and his faculty must consider in relation to their own school.

TYPE OF PROVISION GRADE⟶	K	1	2	3	4	5	6	7	8	9	10	11	12
1. Identification	X	X	X	X	X	X	X	X	X	X	X	X	X
2. Early Admission to K or Grade 1	X	X											
3. Individual and Small Group Counseling	X	X	X	X	X	X	X	X	X	X	X	X	X
4. Enrichment in the Regular Classroom	X	X	X	X	X	X	X	X	X	X	X	X	X
5. Ungraded Individual Progress Plan	X	X	X	X	X	X	X						
6. Partial Acceleration of Pupil (By Subject)	X	X	X					X	X	X	X	X	X
7. Full Acceleration of Pupil			X	X	X	X	X	X					
8. Grouping by Grade-level Sections or Within the Class	X	X	X	X	X	X	X	X	X	X	X	X	X
9. Appropriate Teacher Assignment	X	X	X	X	X	X	X	X	X	X	X	X	X
10. Part-time Special Enrichment Classes					X	X	X						
11. Subject-matter (Course) Acceleration								X	X	X	X	X	X
12. Rapid Progress (Multi-track) Plan								X	X	X	X	X	X
13. Special Talent and Interest Groups					X	X	X	X	X				
14. Honors Classes										X	X	X	X
15. Seminars for the Gifted								X	X	X	X	X	X
16. Differentiated Curriculum								X	X	X	X	X	X
17. Individualized and/or Independent Study Program									X	X	X	X	X
18. Extra-Curricular Activities									X	X	X	X	X
19. Summer School Enrichment Classes										X	X	X	X
20. Special Electives												X	X
21. Advanced Standing in College												X	X
22. Credit by Examination												X	X
23. Early Admission to College													X

PROGRAM FOR THE GIFTED

CULTIVATING CREATIVITY IN OUR SCHOOLS

> "The right to inquire is at the very
> heart of the spirit from which all
> creativeness develops."

The attribute of creativity has too long been shrouded by an aura of the "unknown." Only in relatively recent years has man begun to consider and investigate on a major scale this quality and power which is generally felt to exist as a potential within every individual.

With the marked upsurge of interest in the creative process as it relates to the education of youth, the usual danger exists that indiscriminate exploitation of the word creativity iteelf and related concepts can reduce both to little more than pedagogical jargon. On the other hand, where studious and sincere application of the expanding body of knowledge about creativity takes place in our schools, the individual stands to attain a higher order of personal fulfillment and the progress of mankind in all areas of human endeavor assumes a new direction and vitality.

Creativity has been variously described and defined. An artist has called the creative act "...the free exercise of high skill resulting in something novel." An educator has defined creativity as "...the process of forming ideas or hypotheses, testing hypotheses, and communicating the results." From others in diverse fields of study we have : "Creativity is a way of life"; "Creativity is a maximum of self-actualizing"; "Creativity is the encounter of the intensively conscious human being with his world"; "Creativity is the disposition to make and recognize valuable innovations"; and, lastly, "Creativeness means to be born before one dies!"

In numerous studies certain characteristics of the creative person consistently stand out. The following items suggest some of the principal components of creativity:

1. Sensitive perception of details in the world of nature and the world of man.

2. Openness, awareness, an attitude of inquiry, concern about unsolved problems.

3. Focus, concentration and personal discipline--the ability to enter deeply into an experience.

4. Ability and courage to depart from the mold of conformity into untraveled areas of constructive thought and action.

5. Ability to analyze, to abstract and to synthesize.

6. Originality, flexibility and spontaneity purposefully directed.

7. Fluency of thought.

8. Ability to find some unity in apparent diversity, to perceive structure and relationships, to create new designs.

9. Capacity for evaluating the quality and logic of ideas.

10. High degree of satisfaction in activities which present stimulating challenge and offer promise of fresh exploration, discovery and solution.

As the educator applies his understanding of these and other characteristics toward more certain recognition of unusual creativeness in children and youth, he then faces the magnificent opportunity to help cultivate, through his personal and professional efforts, this potential for a richer more significant way of life.

On the pages which follow, twenty ideas relating to the development of creativity through school experiences have been set down. It is hoped that the suggestions in this compilation from many sources* may prove both helpful and effective for all who undertake to imbue the word "creativity" with genuine meaning in the schools of Hawaii.

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*Special recognition and thanks is accorded to E. Paul Torrance, Director, Bureau of Educational Research, University of Minnesota.

CULTIVATING CREATIVITY IN OUR SCHOOLS

1. Value Creative Thinking

If we expect to develop creativity, we must learn to value it. Educators should consider the development of creative talents to be at least as important as the teaching of information.

2. Make Children More Sensitive to Environmental Stimuli

Almost all of the recent studies of highly creative individuals in a variety of fields emphasize the importance of being sensitive, of being open, to some kind of environmental stimuli. We know that young children can be helped to sense such stimuli more clearly and vividly and that this affects the quality of their creative productions.

3. Encourage Manipulation of Objects and Ideas

The young child has an almost irresistible tendency of manipulation and exploration of objects and this seems to be the basis of curiosity and much inventiveness. Studies of creative thinking in the early school years show a significant relationship between degree of manipulation and the quality and quantity of inventive responses.

4. Teach How to Test Ideas Systematically

One of the most widely accepted objectives of education is to teach the young to test reality, to give them a realistic picture of the world in which they live. Yet we observe at all levels of education and in many areas of adult life the rejection of brilliant and imaginative ideas with no testing. Teachers should show pupils, beginning in the early grades, how to define a problem and keep testing each suggestion systematically.

5. Develop Tolerance of New Ideas

An important defect of much of our educational system today is that more emphasis is placed on the establishment of behavioral norms than on the production of original work. Teachers may even be annoyed when a pupil presents an original answer which differs from what is expected, because it does not fit in with the rest of their scoring schemes for grades. They have to stop and think themselves how the unusual answer should be treated; in many cases, they cannot decide and this is disturbing. If habits of submitting these ideas to reality tests have been established, there is a basis for tolerance. In fact, an important role of the teacher or the leader is to protect and obtain a hearing for minority ideas and solutions to problems.

Along with tolerance of new ideas we should include tolerance of the creative personality. When one thinks in ways which are customarily tabooed, his peers may look upon him as mentally unbalanced. Many students of the creative process regard this kind of imbalance as healthy rather than unhealthy. The truly creative personality is ready to abandon set concepts and sees in life many rich and new possibilities. He sees as **shortsighted** the claim of society that all its members should adapt themselves to a norm for a given time and place.

6. Beware of Forcing Set Practices and Patterns

It is quite likely that just as there is a scientific method there is a creative method. There are many ways to describe a flower, plan a house, write a paragraph, or test a scientific hypothesis. Freedom and permissiveness, with guidance reduced to a basic minimum, are important prerequisites to much creative work.

7. Develop a Creative Classroom Atmosphere

Children should learn early that creative ideas are shared and enjoyed by the group. Education would do well to maintain an important role for the highly creative, but frequently silent, individual. If the child is given an increased number of materials and opportunities in various media, he will develop a greater enjoyment of creative imagination experiences.

8. Teach the Child to Value His Creative Thinking

It is important that the child learn early to place value on his own ideas and to trust his perceptions of reality. One approach to this is to have the child form the habit of recording what he thinks. This helps him to appreciate the value of his imagination and at the same time discourages excessive daydreaming. As the child sees his own ideas expressed in some concrete form, he should be encouraged to elaborate his efforts.

In connection with this principle a word should be said about the matter of fantasy. Many parents and teachers have looked upon fantasies as something unhealthy to be eliminated. Fantasies such as imaginative role playing, telling fantastic stories, making unusual drawings, and the like should be considered as normal aspects of a child's thinking and doing. Certainly we are interested in developing meaningful creativity, but it seems essential that youthful fantasy must be kept alive until the child's intellectual development is such that he can engage in a sound and productive type of creative thinking. There has been scattered evidence in testing of children in the first and second grades that many of those with impoverished imaginations have been subjected to concerted efforts to eliminate fantasy from their thinking too early.

9. Teach Skills for Compromising Peer Sanctions

The importance of valuing the highly creative individual so he will not have to exist as an unhappy deviate in the shadow of perhaps more athletic or socially adept peers has already been stressed.

An examination of almost any of the many lists of personality characteristics of highly creative individuals suggests that it may be almost inevitable that such individuals will alienate their peers. It seems obvious that the problem resolves itself into one of helping an individual maintain those characteristics which seems essential to the development of his creative talent while at the same time helping him to acquire skills for avoiding or reducing to a tolerable level the peer sanctions, so he will have an opportunity to find happy expression for his creative talent.

Help the highly creative child to maintain his assertiveness without being hostile and aggressive. He must be aware of his superiors, peers, and subordinates as persons. He may work alone but he must not be isolated, withdrawn or uncommunicative. In the classroom he must be congenial but not necessarily sociable; outside the classroom he should be sociable but not intimate. He must "know his place" without being timid, submissive, or acquiescent and must "speak his mind" without being domineering. As he tries to gain a point, he can be subtle but not cunning or manipulative. In all relationships, he must be sincere, honest, purposeful and diplomatic but not unwilling to accept "shortcuts" or travel unconventional paths. In the intellectual area, he must learn to be broad without spreading himself too thin, deep without being "bookish" or "too scientific," and "sharp" without being overcritical. This obviously asks much of the child but it provides a model which the highly creative youngster apparently needs to emulate.

10. Supply Information About the Creative Process

Historically, the creative process has been left pretty much to chance. Psychologists surveying the educational scene at all levels have become increasingly convinced that the processes of acquisition, impression, intake, and learning skills have tended to dominate over those concerned with production, expression, output, and creation. It would seem that educational psychology can do much to reduce the fears of teachers and pupils that their creative abilities are absent or negligible by acquainting them with an understanding of the creative process and the conditions under which creativity flourishes.

The steps in the creative process seem to be quite well established and the process appears to be essentially the same regardless of the activity. First, there is apparently the sensing of a need or deficiency, random exploration, and a clarification or "pinning down" of the problem. Then ensues a period of preparation accompanied by reading, discussing, exploring, formulating many possible solutions, and critically analyzing these solutions for advantages and disadvantages. Out of all this activity comes the birth of a new idea--flash of insight, illumination. Finally there is experimentation to evaluate the most promising solution and the selection and perfection of the idea.

It is not necessary to let the production of creative ideas continue to be solely a matter of mysterious chance as it has tended to be in the past.

11. Dispel the Sense of Awe of "Masterpieces"

In our attempt to develop an appreciation of the great masterpieces of man's creation, educators have frequently been guilty of producing a sense of awe of the perfection of these masterpieces. There is some reason to believe that this sense of awe constitutes a barrier to the development of creative talent. Much of this awe can be dispelled if teachers take the time to show in detail the methods which the artist or author used. If a child is shown how a masterpiece is developed step by step, he will stop thinking of it as something beyond his reach and will gain confidence that he too can do some original work. Most theories of physical phenomena can also be shown to have evolved by means of successive approximations.

In this connection, the following are some reminders that teachers can keep before children:

a. All have creative abilities, but not all in the same areas.

b. Even though someone may have done it before, it still might be creative to you.

c. When we are blocked in the solution of a problem, maybe we need to learn new techniques.

d. The solution of our problem doesn't always come after prolonged study of the subject. It may come like a flash after a rest or it may come while one is engaged in a completely different occupation.

e. Above all, don't be afraid to express all the thoughts that come to you, no matter how unusual they may seem.

12. Encourage and Evaluate Self-Initiated Learning

Apparently the first signs of creative thinking in children occur in the spontaneous accompaniment of other activities. One mark of the highly creative individuals is his exceptional self-starting ability. The strong curiosity of the child and his exploratory tendencies suggest that all or almost all children have this self-starting ability. The problem of parents and teachers is to keep it alive. It seems quite likely that this self-starting ability is hindered by overly detailed supervision by parents and teachers. It is possible that too much reliance is placed upon prescribed curricula and that we need to make more effort to appraise and credit growth resulting from the student's own initiative. Since we live in an era of change and we can expect ever increasing rates of change, it would seem that more emphasis might be placed on the task of learning how to learn, the development of self-motivation, keener judgments, critical thinking and reasoning, and the capacity for coping with change. Perhaps we would develop a higher level of creative thinking if we did not try to teach such a large number of subjects and allowed time for self-initiated learning, thinking creatively about the subjects taught.

The reason for evaluating and crediting self-initiated learning seems quite simple. Because grades are important to students, they tend to learn whatever is necessary to obtain the grades they desire. If we base our evaluation on the memorization of details, students will memorize the texts and lectures. If grades are based upon ability to integrate and apply principles, they will attempt to do this. If credit is given for the development of original ideas and for self-initiated learning, they will develop original ideas and engage in self-initiated learning.

13. Create "Thorns in the Flesh"

There is rather general recognition in studies of creative thinking that the essence of creativity lies in a sensitivity to defects, the recognition of a disturbing element. One writer maintains that no one is a creative thinker unless he continuously has a thorn in his flesh. He further feels that thick-skinned people do little or no creative thinking; to them everything is understood, nothing is baffling, there are no problems. Having become sensitive to a disturbance, the creative thinker stays with it, analyzes it, and finally comes up with some kind of speculative answer which is then confirmed by empirical, and preferably experimental evidence. The teacher may have to create these thorns in the flesh by asking controversial or unanswerable questions and posing problems calling for unique discovery and solution.

14. Create Necessities for Creative Thinking

It has often been said that "necessity is the mother of invention," and certainly demanding emergencies and extreme conditions have stimulated much inventiveness. In one sense, this old saying is true because necessity is the need which initiates the creative or inventive process. The individual, of course, must react with the proper motivational intensity to the need. Teachers have many opportunities to create situations which require children to do creative thinking. Every individual should occasionally confront problems which stretch his imagination and ingenuity to the limits.

15. Provide for Active and Quiet Periods

The provision of both active and quiet periods appears to be significant in encouraging the production of new ideas. Important ideas occur to some people suddenly in the heat of various kinds of activities. The history of invention and discovery, however, shows that quiet periods of reflection are also conducive to creative thinking. Repeatedly the bath tub, the bed, the church, and the like have been named as the birthplace of great ideas. The child is not likely to be able to give way to his fantasy, wishes and dreams, and produce imaginative ideas in a busy classroom of 30 to 35 active classmates. The teacher can, however, help the group plan periods of quiet and relaxation during the day. Children should have a chance to do some things alone and not have to participate in group activity every minute of the day. Let them read, write, draw, assimilate, rest, reflect, and investigate as individuals; the quiet may be an aid to creative thinking.

As already mentioned, group stimulation can be valuable. Such school activities as dramatic play, music, and the like can also be important in stimulating creativity. In scientific discovery, rational teamwork and an interchange of ideas are useful in exploiting some results and in the improvement of new techniques. It seems clear, however, that fundamental discoveries arise principally from the efforts of a single individual who is able to follow any fruitful paths suggested by his intuition.

16. Make Available Resources for Working Out Ideas

It is obviously important that children have available the resources for working out some of their ideas. Otherwise, frustration and a feeling of purposelessness are likely to result. There is value in the excitement which comes from seeing the embodiment of one's idea in some concrete form or product. It is also important that teachers and parents utilize the resources of the community in stimulating creative thinking and in working out ideas. The public library, museums, farms, factories, recreational facilities, service institutions, and the like can all play important roles.

Few schools and even communities will be able to provide all of the resources which children will need and want for carrying out their ideas. It is therefore important that they be taught to accept creatively the unavailability of resources and to learn to improvise. It might be pointed out that there is an important difference between accepting limitations cynically and accepting them creatively.

17. Encourage the Habit of Working Out the Full Implication of Ideas

Often original thinkers fall far short of their potential achievement because they fail to follow through on their ideas and work out their full implications. As a result, their work may have obvious defects which could have been eliminated easily. Or, such individuals may fail to reach an important discovery just because they did not press their thinking far enough or carry an idea out to its logical conclusion. A child should begin learning early a willingness and desire to follow through on ideas and to do some of the tedious work of implementing ideas. Later, he must learn to submit his ideas to the standard tests of science, art, literature, and the like.

In many respects the organization of our curricula and the pressure to "cover" standard bodies of content serve as an obstacle to working out the implications of ideas. It is encouraging that today's elementary school seems to be developing more flexible daily schedules.

18. Develop Constructive Criticism--Not Just Criticism

A study of psychology of inventors (Rossman, 1931) indicates that an important difference between the inventor and the non-inventor is that the latter tends only to complain about the defects in his environment while the former is likely to say "this is the way to improve things." These two kinds of thinking are quite apparent in the responses of children even in the first grade.

Every subject we teach offers opportunities for developing and reinforcing the habits and skills of analysis and constructive criticism. Those who characteristically tend to be critical find it difficult to approach a problem imaginatively and those who characteristically tend to be imaginative find it equally difficult to confine themselves to pointing out defects.

19. Encourage Acquisition of Knowledge in a Variety of Fields

Although we have outstanding examples of achievement by "one-track" minds, the history of discovery and invention shows that many of our great creative thinkers have been scholars and that originality is not contaminated by knowledge. Knowledge outside and beyond one's special field is useful in promoting original ideas. In fact, it seems that much of our progress on the frontiers of knowledge has resulted from a specialist in one field borrowing an idea or a technique from another special field and applying it to his own. This diversity of interest and the right to explore new and possibly unpopular ideas lies at the base of problems of academic freedom.

20. Become an Adventurous-Spirited Teacher

The highly creative child will likely continue to feel estranged and inhibited in the school unless he has adventurous-spirited teachers who are willing to listen to some of his wild ideas, help him to test and develop these ideas, and enjoy with him the cultivation of his creative faculties. The adventurous-spirited teacher will impart such spirit to his pupils and even the least imaginative child will probably become more creative. It is reasonable to expect that the teacher who is eager to explore the mysteries of the world about him will fill his pupils with the same desire to discover the new and explore the unknown. If the teacher is forever trying to find out the cause of things, pupils will be stimulated to do likewise.

SUMMARY

First, it is assumed that the development of creative thinking is important from the standpoint of mental health, the acquisition of knowledge, the application of knowledge for successful living and professional performance, and the progress of civilization. It is also assumed that all individuals to some degree possess the abilities involved in being creative, that these abilities can be improved through education, and that it is the school's legitimate function to provide such training.

GUIDANCE PROGRAM

The Department of Education has set forth an educational policy for the public school system of Hawaii which defines the basic functions and aims. Within this policy framework the recently prepared DE guidance "handbook," Elementary School Guidance in Hawaii, further defines guidance, discusses its philosophy, and outlines its aims. In this publication it clearly can be seen that guidance is an integral part of the total educational program. The following abstract from the first chapter of this publication most clearly gives an overview of Hawaii's elementary school guidance program.

- ABSTRACT -

GUIDANCE IN HAWAII'S EDUCATIONAL PROGRAM

The curriculum of the Department of Education is an expression of and a response to the society in which we live. Learnings and activities are in keeping with the needs, interests, and abilities of the individual child, and may be considered from a developmental point of view. Guidance, a planned program of activities aimed at individual achievement and adjustment, pervades and is an integral part of the entire educational program. The elementary school teacher, the key person to help the child, works in a team relationship with other school staff members and specialists.

The guidance of pupils permeates the entire educational system as a continuous, cumulative, and unified process. Guidance is for all children, typical and atypical, who are served by teachers, counselors, and other specialists working together in a team relationship. It renders professional aid to the pupil in these areas:

1. Appraisal: Understanding himself as an individual and how he relates to society's requirements and opportunities.
2. Adjustment: Understanding and acceptance of essential academic and social requirements and standards.
3. Orientation: Familiarity with accepted values, customs and codes of behavior; realization of optimum educational opportunities; and acquaintance with the community, particularly its work world and citizenship responsibilities.
4. Development: Encouragement and opportunity for achievement of developmental potentials, growth of a social consciousness, attainment of a self concept, and self direction.

Guidance in the schools may also be thought of as special services which make the school program more effective in meeting the needs of the individual child through the following processes:

1. Assessing and recording the child's real needs, interests, capacities and aptitudes.
2. Using information gathered aboutthe child and knowledge of child growth and development to meet his individual needs.

3. Individual counseling by professionally trained personnel.
4. Maintaining effective liaison with other community and state agencies and institutions, such as the home, church, recreational agencies and social welfare agencies.
5. Evaluating the guidance program and continuing research directed toward individual needs and guidance processes.

To be effective a guidance program must be a functioning part of the school organization and planning. There are several principles basic to a guidance program in any school:

1. The principal is responsible for and gives leadership to the guidance program in the school.

   He may delegate certain activities and services to staff members, but he is aware of what is happening, is enthusiastic about and supportive of the program, and is responsible for evaluating the programming and for implementing improvements.

2. Concern for the individual child pervades the thought and actions of every staff member.

   Such concern implies that attitudes toward children are sympathetic and objective. Children are accepted at their own levels and rates of development and for their own uniqueness.

   The teacher knows herself as a person and is aware of how she uses herself in relation to the children she teaches. The teacher brings her outlook on life, her attitudes, her hopes and aspirations with her into the classroom. Children are quick to sense the teacher's mood and to respond to her approach to learning.

3. Guidance is an integral part of a functional curriculum designed to meet children's needs.

   Emphasis is on the child's growth and development. Interest in subject matter and teaching methods does not overshadow concern about personality development. Guidance permeates the work of the teacher and extends from classroom organization and environment to children's playtime activities and to the administrative setting of the school.

4. Guidance is dependent upon knowledge of children and interest in learning more about them.

   Teachers and the school staff understand the basic characteristics of child growth and development. They are concerned with the inner, personal development of the learner and how he feels about his school experiences. They realize that how a child feels will probably determine his behavior more than will facts acquired about what to do. Even acquiring knowledge is closely related to the child's feeling about learning and about himself as a learner. There also is appreciation of "norms" and group similarities among children and a knowledge of learning experiences which help the child to grow. When learning drags or behavior becomes deviant, the teacher recognizes the situation and is comfortable about securing assistance early enough to insure improvement.

5. Guidance is related to the needs of home and community.

Free interaction between home and school is encouraged, for there are many opportunities for mutual gain in service to the child. The school reinforces satisfactory home relationships and provides some compensations for disorganizing home experiences. Parents usually are reassured when they have met their child's teacher and know how their child is progressing. Although there is variation in the degree of responsiveness on the part of individual parents, teachers, and schools, communication can be strengthened through leadership and encouragement.

Communities vary as to population, economic status, and cultural background. Some have numerous resources available to their members; others have relatively few. In some there is a strong group morale, while in others individualism predominates. To the extent that the teacher knows about these influences upon the life of the child, she is better able to understand and help him. Particularly is it important for the school guidance personnel to know and to use the mental health, social welfare, and recreational agencies and personnel in their communities.

AN ELEMENTARY SCHOOL GUIDANCE PROGRAM

In the elementary school the teacher plays a significant role in guiding the child. The child is dependent primarily upon one person, his teacher, and is with her throughout most of the school day. Through his relationship with the teacher and with his classmates, the child's personal development and adjustment progress as learning takes place in the classroom.

There are, however, students who require additional attention. Though regularly established referral procedures available to all staff members, the teacher seeks assistance. Her first recourse is the principal, or the person responsible for counseling, who works with the pupil, with the parents, and with the teacher in order to meet the child's needs. Sometimes there are consultations with regular or special advisors, such as the speech-hearing specialist or public health nurse. Sometimes case conferences are held which involve school and community agency personnel who know the child or have specialized understandings. Increasingly it is the school's counselor who renders or coordinates such guidance services to the individual child.

When a child needs more specialized assistance than the school can give, services of district staff specialists, such as the school social worker or the psychological examiner, may be indicated. These guidance workers may serve as a team or individually, as the particular situation requires, in identifying and correcting the difficulties, making interpretations to school personnel, and assisting them in planning for the child's adjustment. In the early elementary school years, identification of the child who needs additional assistance is extremely important. The process of adjustment is enhanced when early help is given.

CLASSROOM ORGANIZATION, ACTIVITIES AND TEACHING METHODS, AND CURRICULUM CHANGES

Guidance comes of age and has a real opportunity to develop its potential in this school of tomorrow. Team teaching in the form of large group instruction, small group conferences, and individual conferences has been tools in the hands of counselors for many years. However, limitations in space, equipment, and personnel have prohibited the development of practices to their fullest.

Guidance and education for individual appraisal, adjustment, orientation, and development involve the day-by-day influence of the teacher. The acquisition of information, understanding, and skill, the formation of attitudes and habits, the development and strengthening of the self concept and the ability to plan, decide, and evaluate all occur in regular school activity. Guidance and education process also involves the counselor who gives more specialized, intensive, and individualized attention through more complex techniques to the problems of individual students at strategic points, working with pupils, parents, and teachers. Other specialists are involved for students who need further specialized help.

The teacher, then serves both as a guidance worker and as an instructor. As such an individual he would have the following guidance functions:[1]

1. Creation of favorable psychological conditions and setting.
2. Systematic developmental and adjusive guidance work in social attitudes and dispositions; self-concept; self-direction.
3. Identification of individual needs and problems.
4. Observation, appraisal, recording of individual characteristics and data.
5. Adaptations of individual and group experiences to individual needs.
6. Limited interviewing and counseling for academic and personal-social adjustment, and orientation.
7. Consultation with parents.
8. Referral of pupils to specialists through the counselors when necessary.
9. Participation in conferences involving needs and problems of individuals.

Thus, in the pilot school which will use team teaching and other newer methods of instruction, the teacher will be taking a more active role in the guidance of individual students. The need to continually trying to know the students better in order to maximize each student's learning, self-understanding, and social adjustment will require of each teacher:

1. Time to observe students singly or in groups situations.
2. Time to study records on the individual student for better acceptance, understanding, and teaching.
3. Time to appraise and record individual characteristics and data.
4. Time for conferences with student or small group of students.
5. Time for participation in conferences involving school and out-of-school staff.
6. Time for consultation with parents.

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[1] From mimeographed material prepared by Dr. Robert H. Matthewson, New York City Board of Higher Education, Division of Teacher Education.

COUNSELOR'S GUIDANCE FUNCTIONS

At the school level, the responsibility for the guidance program rests with the principal. Based on a ratio of 1 - 800, one elementary counselor will be assigned to this school. In this school, the coordinated team approach in guidance of the principal, counselor, and teacher pivots upon the counselor. The counselor, working with the principal and other staff members, provides the leadership for developing, supervising, coordinating and carrying out the guidance activities to meet the guidance objectives. The classroom teachers are important team members in carrying out the guidance process. They provide the rich learning experiences in a broad educational program devoted to individual development. However, the classroom teachers cannot completely fulfill their instructional responsibilities and, at the same time, provide guidance individually for each student. Ultimately, it falls upon the counselor to help the students appraise, evaluate, and interpret the meaning of their experiences in relationship to themselves, their individual characteristics, in relation to their current adjustments and their personal attitudes and outlook. This guidance process is done by the counselor through individual counseling and special group work. The focus of the guidance process is on the individual student--his perceptions in relation to his adjustment, plans, and values. Self-understandings must be developed through instruction, group work, and counseling.

The assumption that good classroom practice will automatically produce favorable guidance outcomes, as described above, is only partly true. Guidance at the elementary level is a special kind of a learning process only partially achieved through good classroom practice. Personal-social development, self-understanding, educational orientation, and development of personal attitudinal outlook can be achieved only by specifically providing for it through individual counseling and special group work. Then, what is the nature of the function of the school counselor at the elementary level which will provide for these favorable guidance outcomes?

In a program of developmental guidance, the counselor's responsibilities include:

1. Core of counselor's work

   a. Individual counseling and interviewing

      (1) Identify and evaluate the needs and problems of the child.

      (2) Appraise the personal characteristics, performance and achievement of the child.

      (3) Assist the child in the development of self-understanding and effective relationship with his environment.

      (4) Interview children on various needs and problems; work with teachers in making pre-diagnostic case studies of pupils with problems.

      (5) In addition to counseling pupils on common needs and

problems, there is provision for specialized counseling for maladjusted students, assistance to teachers in working with such students, and referral to school and community specialists when indicated.

b. Special group work with students evolving around common problems and needs, as an adjunct to individual counseling.

c. Consultation with teachers.

    (1) Interpreting appraisals and understandings concerning the child.

    (2) Development and use of guidance techniques.

d. Development, supervision, and coordination of guidance program for the school.

e. Evaluation of guidance program

2. Shared with teachers

    a. Orientation of pupils to new experiences.

    b. Appraisal of characteristics and potentialities of students.

    c. Developmental progress of pupils.

    d. Liaison with the home.

3. Shared with other staff personnel in the school

    a. Referrals

    b. Liaison with the home, District Office, community groups.

    c. Public relations

The counselor has special role in helping teachers with both individual and group activity. Working with the classroom teacher, he helps to provide specific special experiences, integrated into good classroom practice and supplemented by the counselor, which insures growth toward the guidance objectives described in Chapter I. These specific special experiences may include such representative techniques and procedures such as:

1. Creating favorable learning conditions: Staff, grade, and case conferences to study means of creating favorable pupil-teacher relationships; techniques for interpersonal relations; techniques for developing favorable psychological conditions which will promote social responsibility, self-confidence and development, cooperation, etc.

2. Developing favorable attitudes and behaviors in classroom activity:

Using self-study and group interaction techniques to develop favorable attitudes through pupil planning, development of projects, and pupil evaluation.

3. Studying and experimenting with observational and appraisal instruments: Using various personality attitudinal, and interest inventories, autobiographies, questionnaires, classroom guidance folders, etc.

4. Special group work: Organizing group guidance programs oriented toward pupil needs and problems in areas of personal-social adjustment and development and educational orientation, such as peer relationships, high ability-low academic performance, problems of "growing up," self-appraisal, etc.

5. Developing self-understanding: Using guidance techniques such as tests, discussions, observations, some degree of interviewing, role playing, problem stories, etc.

6. Articulation conferences: Arranging for systematic conferences of teachers to exchange information about pupils.

7. Parent conferences: Arranging conferences for educational purposes and for discussion of common needs and adjustment of children.

In addition to this work with teachers in individual and group activity, the counselor has the special job of counseling and special group work, beyond the skill and training of the classroom teacher. These guidance activities would include:

1. Individual student evaluation through counseling, periodically at strategic points to assess the student's progress toward the guidance outcomes.

2. Supplementing regular classroom group guidance with special group work periodically and at strategic points, e.g., orientation to intermediate or high school.

3. Providing a systematic growth continuity with special guidance emphasis from grade to grade with individuals and groups. Ordinarily, students make a new start with each new grade and teacher and frequently without much guidance continuity, although there may be academic continuity.

4. Identifying and fostering developmental growth in the various guidance objectives.

5. Working with parents as much as possible.

Time should be provided for the counselor to meet with groups of students in special group work as described above. This would mean that during the week the counselor will be meeting with one or two groups of students of no more than twelve for one session per week. The length of the sessions will vary according to interests and special needs. She would also be meeting with larger groups of students of no more than 35 in informational sessions such as transition to next grade or to intermediate school, how to study, etc. There may be times when she may meet with an entire grade in an assembly for purpose of orientation, behavior relationships, etc.

In terms of allocation of the counselor's time it would mean:

Individual counseling with students and parents: (all needs)	30% of time
Group guidance:	30% of time
Consultation with teachers:	30% of time
Other duties:	10% of time

Of course, the above division of time should be flexible to permit variations to fit the situation.

GUIDANCE STAFFING

The patterns for organizing a school for guidance is clearly described in Chapter VI of Elementary School Guidance in Hawaii. It is emphasized that the general guidance objectives described earlier still give direction to the program and organization for guidance in a school.

The staff described below will be fully trained professionally certified people with desirable personal qualities, and adequate experiential backgrounds.

In the guidance staff the following will be required:

1 counselor. Ratio: 1 - 800

1 part-time school psychologist serving a cluster of four schools, giving one-fourth time service. Ratio: 1 - 2,500

1 part-time school social worker serving a cluster of four schools, giving one-fourth time service. Ratio: 1 - 2,500

1 clerk or secretary.

The psychologist and social worker may possibly be stationed in this school or some other school, working out of the assigned school.

Presumably, since this will be a pilot school, there may be additional staffing beyond the regular staffing. These staff members will be people in training for positions as counselors, school social workers, and school psychologists. These people may be from the University's training program or from the Department of Education itself--promising people who may be assigned temporarily to the pilot school to observe and for training. The numbers will be flexible.

In addition, the school will be served by out-of-school specialists such as public health nurse, doctor consultant, district and state guidance, curriculum, etc., specialists, community agencies workers, other community resource people, etc.

FACILITIES AND EQUIPMENT

Guidelines for the location of Guidance Unit[1]

1. Located out of but near the main flow of student traffic, so noise is limited and privacy is obtainable, to facilitate contact, scheduling, and communication. **Lavatory** and drinking facilities readily accessible.
2. In proximity to, yet separate from but near the administrative offices for convenient access to personnel records and certain clerical services (including attendance).
3. Accessible by a direct entrance from corridor.
4. Located to provide exits from counseling area. Separate from entrances, if possible.
5. Readily accessible from a main entrance for the benefit of parents and representatives of community agencies.
6. Reasonably near to related personnel services, such as pupil accounting, health, and psychological services.
7. Reasonably near to the library for convenience in use of display and reference materials, and to audio visual center.

Space

The Guidance Unit should provide:

1. Attractive and comfortable reception area with appropriate materials to encourage profitable use of waiting time.
2. Private counseling room.
3. Conference room for such cases as case conferences; individual and small group special staff personnel such as the public health nurse, school social worker, workers from community agencies, doctor-consultant, Department of Education specialists.
4. Multipurpose room adjacent to counseling offices for group testing, group guidance instruction, special group work, and in-service training activities.
5. Storage room.

Activities which go in the guidance area

1. Individual conferences such as: pupil-counselor; parent-counselor; specialist (social worker, public health nurse, etc.)-counselor; specialist-parent; specialist-counselor; teacher-counselor.
2. Group instruction in guidance such as: counselor-35 pupils; visiting resource speaker-35 pupils; parent education.

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[1] Ibid. pp. 12-13, with modifications.

3. Special group work such as: counselor-no more than 12 pupils.
4. Group conferences such as: case conference.
5. Interviews.
6. Group and individual testing.
7. Clerical work: records, typing, filing, telephoning, etc.
8. Student browsing while waiting for appointments.

Classroom

Each classroom should have a private conference room for the teacher, equipped with a one-way screen to provide for observation of students singly or in group situations. Observations can be made by the teacher, counselor, visiting specialist, etc.

Waiting Area

1. Purposes: (a) Reception area, (b) informational resource area, and (c) Place for students and others to wait for their appointment with the counselors.
2. Size: Provide space for a secretary-receptionist and for one student for each counselor available. Additionally should be space available for three or four additional persons, such as parents or teachers who might be accompanying the student.

Counselors' Offices

1. Number: one office. Also, one additional office should be provided for visiting specialists, etc., who may want to interview students or teachers.
2. Size: sufficient to contain at least five persons since sometimes in an interview, the parents as well as teachers may be present.
3. Construction: Interviews are confidential so rooms should offer privacy and be reasonably soundproof. Use of partial partitions is not satisfactory.
4. Special requirements: Since this will be a pilot demonstration, and possible training school one of the offices should be equipped with one-way screen and communications system (for recording and listening in on interviews).
5. Exits other than through waiting area should be provided for students leaving counseling offices.

Small Conference Room

1. Number and size: one room, sufficient to contain at least 13 persons.
2. Construction: Should offer privacy and be reasonably soundproof. Use of partitions is not satisfactory.

3. Special requirements: Since this will be a pilot, demonstration and possible training school one of the rooms should be equipped with one-way screen and communications system (for recording and listening in on conferences). Possibly this special room could be adjacent to multi-purpose guidance room, which should be similarly equipped.

4. Exit other than through waiting area should be provided for conferees leaving this room.

Multipurpose Guidance Room

1. Number and size: one large room about the same size as a regular classroom.

2. Construction: Should offer privacy and be reasonably soundproof. Use of partitions is not satisfactory. Movable walls should be installed so that it could be partitioned into three small conference rooms.

3. Special requirements: Since this will be a pilot, demonstration and possible training school it should be equipped with one-way screen and communications system (for recording and listening in on sessions). Possibly this room could be adjacent to the specially equipped small conference room described before.

Storage Room

This could be one area or several smaller areas, depending on the size of the guidance area and the ingenuity of the architect. Should be locked since tests and other confidential materials may be stored here. Fireproof construction. Should be large enough to store audio-visual equipment.

Other Personnel Services Area: Two offices, similar to the counselors' offices described before, should be provided. These are for the school psychologist and the school social worker.

NEW EQUIPMENT

It is assumed that the usual office furniture and equipment such as desk, table, chairs, locked files, telephone, book shelves, display files, typewriters, etc., would be provided.

The following new equipment would be required in the following areas:

Waiting Area:	Large bulletin board for display of information and materials. Bookcase for guidance materials. Display rack for guidance materials.
Small Conference Room:	Conference size table with chairs to accommodate at least 13 people. Bulletin board. Chalk board

Multipurpose Guidance Room: Movable desks to seat at least 35 students.
Storage space, either a closet or a storage wall.
Large bulletin board
Blackout curtains for use with audio-visual equipment.

The following facilities for or audio-visual equipment should be provided:

TV outlets
Projector for films and filmstrips
Overhead projector
Opaque projector
Intercommunications system for all offices and rooms
One-way screens as described before

Educational-vocational and other guidance information materials will be stored and maintained in the school library which would be easily accessible from the guidance area.

HEALTH AND SAFETY INSTRUCTION

In considering the "needs of the local and national community for an enlightened citizenry," the elementary school should have a fully qualified School Health Educator as part of the teaching team, functioning in his role similarly as other teachers with other specific skills, techniques and knowledge. It is envisioned that with planning, the services of such person could be available to more than one elementary school.

In addition, the services of a full-time health coordinator as a member of the administrative staff are needed to coordinate the total school health program and assist in the integration of services and instruction.

This combination of school health educator and health coordinator will assure the sequential development of health learnings, wider and more discriminating use of teaching materials and health personnel, better planned and more rewarding and meaningful field trips to health resources and facilities, group demonstrations and health counselling with individual students and parents.

There is no special classroom organization that is peculiarly its own.

INDUSTRIAL ARTS EDUCATION

Industrial Arts on the elementary school level is an integral phase of the total program of education. Industrial Arts activities emphasize planning and construction as pupils participate in various subject activities. It helps strengthen pupils understanding of social studies and science, create opportunity for functional use of language and arithmetic skills, and provide opportunities for pupils to develop physical coordination and safety practices.

Important trends in Industrial Arts Education that have influenced in the planning of elementary education are:

a. Fostering the potential expression of the student
b. Developing skills and understanding for desirable group participation
c. Providing opportunities for creating and making projects
d. Promote desirable attitudes toward safety in the school and home

I. Classroom organization best suited to carry out the instructional program.

  A. Specifications

    1. Space area needed - grades K - 3

      a. Integral part of the classroom
      b. Work benches
      c. Tool truck
      d. Storage for materials and supplies

    2. Space area needed - grades 4 - 6, 75 sq. ft. per student

      a. Unified art room, multipurpose for all practical arts, Industrial Arts, Arts & Craft and Home Arts
      b. Material and supply storage
      c. Open to tool panel
      d. Project storage
      e. Finishing area

  B. Scheduling of teachers

    1. One Industrial Arts specialist assist primary grades--K - 3 teachers, individual or groups, in carrying out unit activities in the classroom

    2. In grade levels--4 - 6, the same specialist plan with classroom teachers in large and small group instruction in the unified arts building

    3. One practice teacher

      a. Assist in preparing, maintaining materials, supplies and equipment

4. One-half time classified custodian

   a. Maintaining hand tools and equipment

C. Scheduling of students

1. Grades K - 3, remain in classroom

2. Grades 4 - 6, go to unified arts building

II. Activities and teaching methods recommended.

A. Activities

1. Construct problem-solving projects by transforming through three dimensional media in

   a. Construction of instructional aid, toys, games for classroom use
   b. Constructing scenery for dramatic production
   c. Planning and arrangement of plays for classroom and other special display areas
   d. Participation in Open House, seasonal activities
   e. Planning and constructing of model homes and buildings
   f. Making of articles for Junior Red Cross and hospitals
   g. Construction of items for home use

B. Teaching methods

1. Practical Arts specialists and classroom teachers program over all project activities in large group instruction

2. Industrial Arts specialist and respective classroom teacher work with small group in carrying their phase of instruction

3. Practice teachers assist with individual instruction

III. Curriculum Changes Anticipated

1. Integration of "line" experiences using new process and materials with other instructional areas.

2. Increased creative outlets

3. Develop appreciation for the dignity of labor, the skill craftsman, and the problems of industrial society

IV. Specialized printed materials and audio-visual equipment requiring classroom space.

1. Same as other programs in grades--K - 3

2. Same as other programs in grades--4 - 6

V. Materials and equipment which could be shared with other classes.

  1. Tool truck
  2. Materials and supplies
  3. Instructional aids

VI. Strengths as an outgrowth of the new proposals.

  1. Enables teachers to observe and evaluate the interest and abilities of the child
  2. Provides opportunities for psychological and social adjustments
  3. Provides opportunities for the perfecting of desired manipulative skills

VII. New problems one can anticipate which should be given careful consideration in implementing the foregoing plans.

  A. Teacher education
    1. The success of the program will depend a great deal on the background experience and belief of teachers
  B. Planning and conferring time
    1. Specialist and classroom teachers need to carefully plan program activities
  C. In-service training of teachers
    1. In-service teachers must be oriented and trained for Industrial Arts activities

LANGUAGE ARTS

Objectives of the Language Arts Program:

The main objectives of the language arts, both oral and written communication, are the development of critical thinking, appreciation of literature and drama, and the ability to communicate effectively.

We accept the idea that "the language arts are a single pattern of inter-related skills which cannot be learned separately, and that the child's learning of the language arts is closely related to his individual growth patterns and experiences."*

Learning occurs in a classroom environment where a child feels he is accepted and appreciated by his teacher and his group. The teacher is the key person who sets the emotional tone in the classroom.

She plans her program in order that her pupils may,

> learn to receive, interpret, and express ideas and feelings; develop critical and creative thinking;
>
> develop confidence for self-expression;
>
> develop skills in critical listening, speaking, reading and writing;
>
> develop a love of and a familiarity with "good" literature and drama;
>
> acquire an extension of experiences

I. Classroom organization best suited to carry out the special program.

1. Self-contained ungraded primary with much individualization of instruction. If additional personnel services are available, the following experience areas may be considered for team-teaching: music, physical education, creative dramatics, art, library services.

2. Self-contained nongraded elementary program for grades 4, 5, and 6, with pooling of teacher talents for areas of experiences which may be suitable for large group instruction.

II. Activities and teaching methods recommended to best carry out the proposals.

group sharing of experiences
creative dramatization
puppetry
shadow play
choral reading
writing & reading of poetry
story-telling
recording voices and listening to recordings
guided listening activities
developmental reading instruction
individualized reading
individualized spelling
activities for guided practical and creative writing experiences
activities to develop skills in writing (organizing ideas, usage, etc.
activities to develop skill in penmanship

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*Strickland, Ruth G. - The Language Arts in the Elementary School, D. C. Heath, Boston, 1957, page 41

III. Curriculum changes recommended.

1. More individualization of instruction.
2. More systematic recording and use of pupil records.
3. No grade designations.
4. Content for subject areas--no compartmentalizing on grade level basis; no grade designation of the basal texts.

5. More frequent use of problem-solving approach.
6. More cooperative planning and evaluation--long range and short term plans.
7. Use of more trade books and other reference materials with less dependence upon sets of texts.
8. Less copy work by pupils.
9. More experiences in speaking and interacting with other pupils.
10. More pupil participation in planning and evaluation.
11. More purposeful learning through critical thinking rather than memorization of facts.
12. Promote the development of work habits and study skills.

IV. Specialized printed materials and audio-visual equipment which would require classroom space.

puppet stage
projectors--filmstrip, over-head, opaque, movie
phonograph and recordings
dual track tape recorder and earphones for 10 pupils
teaching machines for 10 pupils
flannel board
chart stand
television and radio sets

Light-controlled classroom should be considered in the initial planning of the school.
Adequate storage place easily accessible to the teacher.
A classroom library with a minimum of 200 single title books, reference materials, newspapers, and magazines.
Teaching aids such as globes, maps, charts, flat pictures, screens, etc.
Textbooks.

V. Materials and equipment which could be shared with other classes:

movie projector
filmstrip projector
radio

VI. Strengths as an outgrowth of the new proposals.

1. Greater respect for the integrity and worth of the individual pupil.
2. Each pupil progresses at his own rate of learning.
3. Use of multi-sensory approach in teaching.
4. Provides more opportunities for creative teaching.
5. Provides more opportunities for sharing of ideas among the teachers, thereby, promoting professional interest and growth among them.

VII. New problems one can anticipate which should be given careful consideration in implementing the foregoing plans.

Problems we anticipate:

1. Inadequately prepared teachers. Need for better pre-service and in-service programs. More laboratory experiences in the pre-service language arts methods courses.
2. Need for better staffing to meet the needs of each school.
3. Lack of parental understanding and support. (Need for close home-school relationship.)
4. Need to limit the school enrollment to 500 pupils and a 25/1 pupil-teacher ratio.
5. Decrease enrollment in existing school plants to provide more rooms for equipment and classroom facilities.
6. Need for more stable and long-term staffing of teachers.

Careful consideration should be given to the following needs in implementing the plans for the language arts program:

1. Establish a library unit that will be centralized, easily accessible to the classrooms.
2. Provide for a glassed-in teacher's office that could be used for conferencing and instructional preparation.
3. Provide for sound-proof and glassed-in enclosures for individual and small group activities.
4. Provide for a teachers' workroom with such items as, a duplicating machine, a typewriter, adequate supplies, reference materials for instructional preparation, large worktable, cabinets, etc.
5. Provide school time for teachers to plan and prepare their lessons.
6. Free teachers from constant interruptions and performing clerical duties. Make use of teacher helpers.
7. Construction of all-purpose rooms, rather than cafetoriums, for large group language arts activities.

SCHOOL LUNCH PROGRAM

Aims of the Program:

1. To provide meals which meet 1/3 of the nutritional needs of school children.
2. To provide learning experiences.
3. To establish desirable food habits.

Implications of Recent Trends for School Lunch Programs

If a kitchen will not be designed for the new elementary school, then the food must be prepared in a central kitchen and must be trucked to the new school.

An area for receiving hot and cold food for the lunch program should be provided at each satellite school. If hot and cold food trucks are not provided to transport and keep the food until serving time, consideration must be given in providing a range or ranges with ovens and a refrigerator in order to make the food palatable and prevent food spoilage.

Facilities for washing dishes and utensils at the satellite schools are important rather than trucking dishes back to the secondary school kitchen.

Food service can be provided from rolling hot and cold carts or counters in the service area. In secondary schools the kitchen area should be separated from the multitorium by acoustical partitioning to prevent instrusion of kitchen sounds at times when the multitorium is used for purposes other than dining.

For suggested arrangements, see page 74-75, Design for E.T.V.

7

MATHEMATICS

Introduction

Arithmetic is a discipline in which competencies in skills and understandings are built sequentially. The rate of learning varies from student to student. Careful grouping makes individualized teaching more feasible.

I. Classroom organization best suited to carry out the instructional program.

The classroom organizations that lend themselves most advantageously to arithmetic are:

Lower elementary -- ungraded in self-contained classroom
Upper elementary
- Ungraded
- Dual Progress

With the ungraded program in the upper elementary, the arithmetic classes will meet at the same time each day and students will be grouped with students that are achieving at the same level. Grouping within groups will still be necessary but the range will be less. Students may progress from one group within a group or to another room group. A teacher specialist should coordinate the program and do in-service work with teachers.

With the dual progress plan, teacher specialist "A" will work with four to five groups daily, at different periods, and will assume the major responsibility for the arithmetic program for these students. Teacher specialist "B" will meet with four or five groups at the same time as specialist "A" and will likewise assume the major responsibility for their arithmetic program. By two groups meeting at the same time, a student may be moved from teacher "A" to teacher "B". This will necessitate a combined planning period for the specialists. Specialists "A" and "B" will need periods when they meet with teachers of their students who are responsible for the other disciplines.

These meetings can provide time for discussing the needs of the individual students. There may also be plans for integration of subject matter.

II. Activities and teaching methods recommended.

There will be
- Modified team teaching
- Limited dual-group presentations
- No planned large group presentations
- Emphasis on use of laboratory materials

III. Curriculum Changes Anticipated

Curriculum changes anticipated are:
- Concepts will be clarified before abstraction is introduced. This will be possible because of more individualized teaching and wider use of laboratory materials

- Mathematical concepts will be learned sooner by abler students
- Enrichment materials can be introduced more readily

IV. Specialized printed materials and audio-visual equipment requiring classroom space.

The physical plant will provide space for

- A classroom on each side of a laboratory which will be used by teachers of adjoining rooms. It will provide

    chalk boards
    storage space
    bulletin boards
    display counters or cases
    book shelves
    student desks and chairs

- Mathematics laboratories as a part of each classroom where they will be available to students

    perception-building materials
    reading material
    materials for making models
    equipment for measuring and weighing
    tools for construction work
    drawing boards

- Teacher Center for
    files on student records
    files for teacher plans
    projectors
    storage space (paper, films, etc.)
    typewriter
    duplicating machines
    teacher desks and chairs

V. Materials and equipment which could be shared with other classes.
The mathematics laboratory will be shared by other classes.

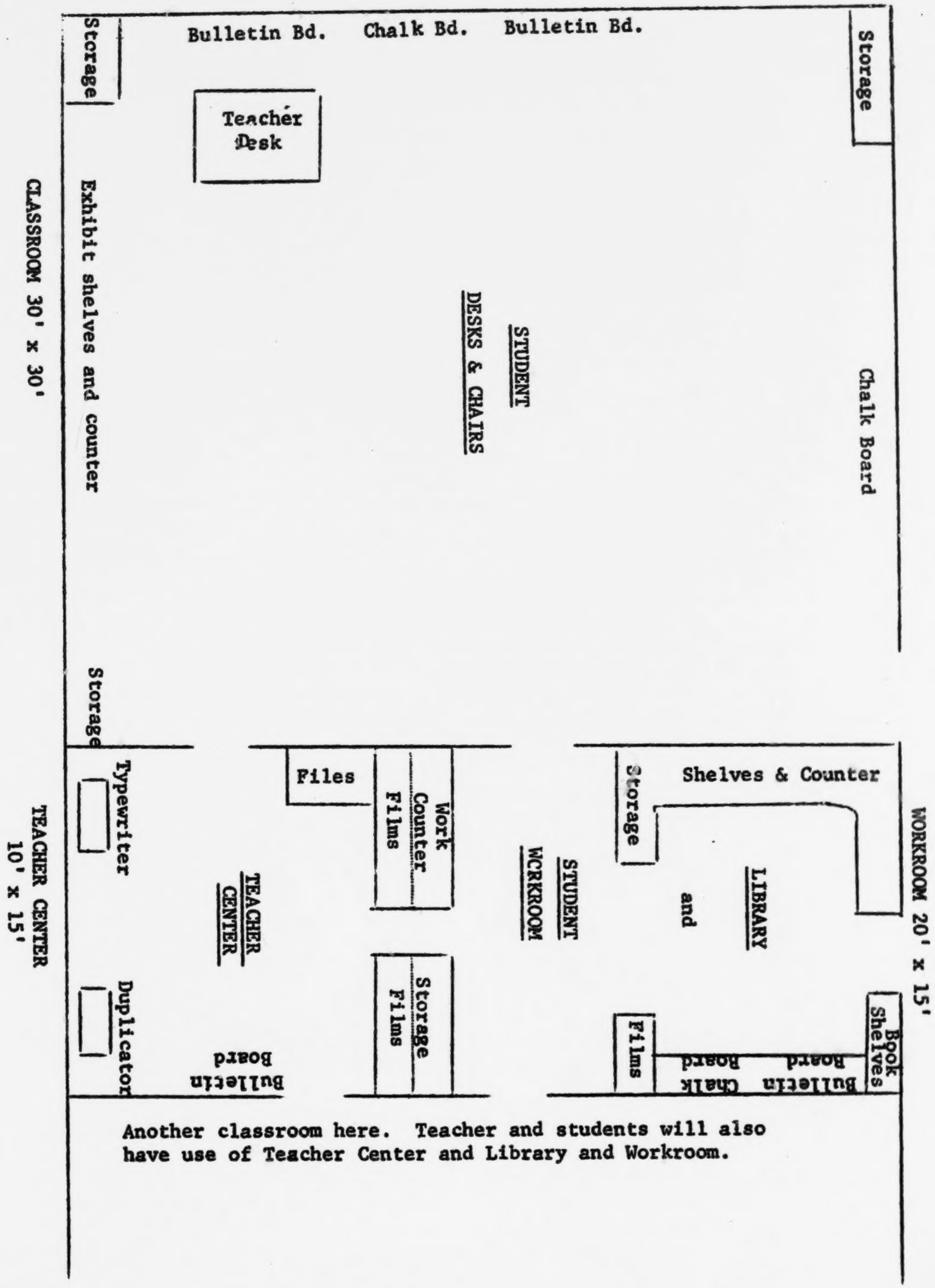
VI. Strengths as an outgrowth of the new proposals.

The particular strengths of such a plan will be

- Pupils progress at individual rates
- Greater clarification in the learning process
- Greater consistency in sequential learning
- More efficient use of teacher talents

VII. New problems one can anticipate which should be given careful consideration in implementing the foregoing plans.
Problems that will need to be resolved

- Lowering of teacher-pupil ratio
- Training of teachers
- Providing teacher specialists in dual progress plan
- Providing specialists for coordinating programs and up-grading teachers in ungraded elementary


CLASSROOM 30' x 30'
Storage
Bulletin Bd.
Chalk Bd.
Bulletin Bd.
Storage
Teacher Desk
Exhibit shelves and counter
STUDENT
DESKS & CHAIRS
Chalk Board
Storage
Typewriter
Files
Work Counter
Films
TEACHER CENTER
Storage
Films
Duplicator
Bulletin Board
STUDENT WORKROOM
Storage
Shelves & Counter
LIBRARY
and
Films
Bulletin Board
Chalk Board
Book Shelves
WORKROOM 20' x 15'
TEACHER CENTER
10' x 15'

Another classroom here. Teacher and students will also have use of Teacher Center and Library and Workroom.

MUSIC

1. Goals

To continue offering a broad program of music as described in the State music guide, Music For Everyone, with additional emphasis in the 4th, 5th and 6th grades on fundamentals of music, experiences with instruments and singing.

2. Activities

a. General Music

General music activities will be taught by the classroom teachers with possible part-time assistance by specialists from the State and district offices and other members of the school staff. Activities would include simple songs, rhythmic activities, seasonal programs, creative activities, listening activities and coordinating music with other subject areas. Most of the general music program would be carried on individual classrooms. However, occasionally classes may be combined for special programs.

b. Singing Groups

This is an elective and/or selective group of pupils from grades 4 and 5 who have demonstrated special interest and abilities in singing. Emphasis in this group will be placed on tone production and blend, music reading, and part singing in mass ensemble, small groups and as soloists. This may become a performing group for special occasions. The class would meet once or twice a week and be taught by a vocal specialist or a member of the school staff. A similar group would be developed for 6th grade youngsters to meet two times a week and this group might come together with the 4th and 5th grade classes on special occasions.

c. Instrumental Experiences

In grades 4 and 5, all pupils will participate in activities with such instruments as piano, ukulele and tonetts, and examine and experiment with standard orchestra and band instruments as part of the general music program. These activities would be taught by the classroom teachers with part-time assistance from instrumental specialist assigned to the school or from the district office. At the 6th grade level, after a period of orientation and counseling (including a testing plan) some members of the class would be guided into selecting an instrument for small group instruction for the balance of the year. The instruments offered would be the three basic orchestra and band instruments; namely, violin, clarinet and trumpet. Some students might want to begin on another standard instrument. These groups would be taught twice a week by specialists. Probably not more than 25 to 40% of the class membership would be involved in this part of the 6th grade music program.

3. General Considerations

It may be noted that little mention has been made as to how music reading will be taught. It is the feeling of the committee that this phase of music education should be a carefully planned outcome of all music activities.

Although the three elements of this program may be taught in small groups, mass sessions should be planned to bring together all instrumentalists and singers.

It is further the recommendation of the committee that all students will be guided into either electing instrumental or vocal activities.

As soon as practical, pupils in the 6th grade instrument program should be encouraged to take lessons outside of school hours and members of the vocal groups may take part in extra-curricular singing activities and/or take private piano lessons.

The classroom teachers should coordinate all music activities and be allowed ample time for planning active participation and evaluation.

MUSIC

I. Classroom organization best suited to carry out the instructional program.

As indicated on the sample schedule, it will be necessary to have room facilities to accommodate large groups as well as individual and small group rehearsal rooms. The large rooms should have a piano, an adequate record play, radio, over-head projector and ample chalk and tack board space.

II. Activities and teaching methods recommended.

None

III. Curriculum Changes Anticipated

The change in the elementary music curriculum is more in terms of emphasis although some course content changes can be anticipated to facilitate these realignments in planning.

IV. Specialized printed materials and audio-visual equipment requiring classroom space.

In addition to items listed under #1, it is imperative that the students in these general music classes be supplied with music texts and special material for the instrumental and vocal groups. In addition, the teachers would need the teacher's manual and the records for the text sessions. The budget for the vocal and instrumental groups should include allowances for such items as instrumental and vocal music, maintenance of instruments, music stands, and incidental instruments as suggested for the 4th and 5th grades.

V. Materials and equipment which could be shared with other classes.

Nearly all the equipment except the music listed under #1 and 4 can be shared if the classes were carefully planned.

VI. Strengths as an outgrowth of the new proposals.

Following are some of the areas of strengths which might develop with such a program:

a. an early introduction to instruments, making it possible for youngsters to examine them, select the instrument they want to play, and receive some instruction before moving into a 7th grade band program

b. a sequential growth in singing ability

c. a better understanding of the basic concepts of music reading

VII. New problems one can anticipate which should be given careful consideration in implementing the foregoing plans.

a. a problem that may arise in implementing this proposed plan would be to determine the person who would assume leadership in coordinating responsibility for the total music program. Ideally this would be an off-ratio teacher, but it probably would have to be assumed by a classroom teacher in which case adequate time for planning must be allowed.

b. skillful guidance must be employed in order to help the individual pupils select vocal or instrumental activities as their major center of interest

Sample Schedule for Sixth Grade Music Program

Day	Monday	Tuesday	Wednesday	Thursday	Friday
Time Allotted	10 minutes	20 minutes	10 minutes	30 minutes	20 minutes
Pupil schedule	General music	Instructing instrumental or vocal group	General music	General music	As Tuesday
Teacher (classroom)	General music	Free or with vocal group or plan with other teachers	General music	General music	As Tuesday
Teacher (special instruction) violin, wood winds, brass	Other school or assist classroom teacher in general music or individual instruction	Instrument instruction	As Monday	As Monday	As Tuesday
Teacher (special vocal if not classroom teacher)	Other school or assist classroom teacher in general music or instructing small group or individual	Vocal group	As Monday	As Monday	As Tuesday
Teacher (vocal if classroom)	General music	Vocal group			As Tuesday

PHYSICAL EDUCATION

Introduction

I. What is physical education?[1]

Physical education is the name given to one phase of the total process of education. This phase of education is characterized by vigorous muscular activity and related responses and is concerned with the modifications of individuals which result from these responses. Physical education is education through predominantly physical activities. Because of our modern knowledge of the organismic unit of the individual, based on substantial evidence from the fields of physiology, psychology, and sociology, educators today have accepted the physical education program as indispensable to the well-rounded curriculum for the elementary school child.

II. The objectives of physical education.

1. The development of organic power and vigor, or physical efficiency.
2. The increase in neuromuscular co-ordination, or specific skills in motor activities.
3. The development of desirable social habits and attitudes.
4. An appreciation and love for, and satisfying skills in wholesome leisure-time activities.

III. Types of activities included in an elementary physical education program.

1. Guided play
2. Semi-active and active games and relays
3. Stunts, tumbling, combatives and conditioning activities
4. Simple team games
5. Rhythmical activities
6. Quiet and classroom games

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[1] Department of Education. Growth Through Physical Education Hawaii: The Department, 1959, p.A-1.

[2] Ibid, p.A-1.

[3] Ibid, p.D-18.

I. Classroom organization best suited to carry out the special program.

A. Staffing

The committee recommends that two physical education specialists be employed and two teacher aides in physical education be assigned to this school. One specialist and one aide should have the qualifications to teach swimming. It will be the responsibility of the specialists to act as team leaders in assisting the classroom teachers with their physical education programs. They are not to take over the entire physical education program in order to give the teachers a free period.

B. Grouping

1. Lower elementary -- K-3

By grade with groups no larger than normal classroom enrollment of 25. Smaller groups can be formed according to immediate needs and/or the type of activity (e.g., individual self-testing activities.)

2. Upper elementary -- 4-6

By grade with large groups including the 4 sections (approximately 100 pupils). Smaller groups can be formed according to the type of activity and/or the immediate needs.

Swimming classes will be no larger than 25 and the groups will be formed according to ability and the number of teaching assistants available during the period.

II. Activities and teaching methods recommended to best carry out the proposals.

A. Activity or unit approach

Large group presentation by lecture, demonstrations, and audio-visual aides and natural guided play experiences. (Size of group is specified in question #1.) The presentation can be given by a resource person, physical education specialist, or an interested, enthusiastic classroom teacher.

B. Activity or unit participation

Smaller groups practice skills, discuss rules and attitudes, and apply same to the "game or dance."

C. Activity or unit evaluation

Physical fitness tests
Practical skill tests
Knowledge tests
Tournament competition

Note: The committee recommends that the specialist and classroom teacher consistently take advantage of the innumerable opportunities to integrate physical education with all the other subject areas.

III. Curriculum Changes Anticipated

A. Addition of Aquatics

Swimming is an individual sport that should be taught in the elementary school. The acquisition of swimming skills is vital, not only because the ability to swim often saves lives, but also because swimming is one of the best all-round physical development activities. It can be enjoyed as a recreational activity by persons of all ages and even by many physically handicapped individuals.

The elementary school swim program should aim to overcome in each pupil fear of the water, and should develop in each child the ability to float and to swim a short distance.

The committee recommends that the swimming program be given to pupils of grades 4-6 with the swimming specialist being responsible for the instruction. Students from 2nd and 3rd grades can be selected according to swimming readiness. The physical education aides, teachers and parents interested in promoting swimming can assist the specialist. The size of classes and method of grouping was specified in item #1.

B. Addition of Outdoor Education

During the past few years Outdoor Education has assumed an ever-increasing importance until today it stands as one of the most significant developments in education.

The modern school utilizes all the resources available in the community in providing a curriculum to meet the needs of all the students. In achieving the accepted objectives of education, it becomes clear that many learning experiences can take place most effectively outside the classrooms.

Camps and outdoor facilities constitute a good climate for learning and make the following unique contributions:

1. Social living and planning
2. Better understanding of the physical environment
3. Skills in outdoor pursuits
4. Work experiences
5. Recreational living

Outdoor Education should not be regarded as another "kind" of education or become separated from subject matter areas and other curriculum activities--it has implications for all phases of the curriculum and for all departments.

The committee recommends that the physical education specialist act as the team leader in planning the program of Outdoor Education in our future elementary schools.

IV. Specialized printed materials and audio-visual equipment requiring classroom space.

The physical education classrooms are here defined as playground, large room for physical activities, swimming pool, and locker and shower facilities.

A. Playground equipment

A minimum amount of supplies (balls, bats, etc.), will be kept in each teacher's homeroom. A central storage space is needed for additional supplies and heavy outdoor equipment such as tetherball poles, and "standards" for nets.

B. Large activity room equipment

This room should be constructed with dividers allowing space for 4 small groups plus a storage room for tumbling and rhythm equipment.

C. Swimming pool equipment

Storage space is needed for the standard pool equipment including poles, kick boards, cleaning apparatus, and filters.

D. Locker and shower room equipment

Locker and shower facilities to accommodate a peak load of 50 pupils for showers and 100 lockers.

The physical education teachers will obtain the audio-visual equipment and machines from the audio-visual center in the school.

V. Materials and equipment which could be shared with other classes.

All equipment can be shared with other classes.

VI. Strengths as an outgrowth of the new proposals.

A. Employment of physical education specialists

1. Improved instruction in skills
2. Better planning and progression from grade to grade
3. Available consultatory help gives the teacher more confidence
4. Physical education specialist is aware of latest trends and activities which can be shared with the teachers
5. Promotion of values and appreciation of physical education to students, staff, and community.

B. Addition of Aquatics and Outdoor Education

1. Contributes to the broad over-all aim of education--the optimum development of the potentialities of each individual.
2. Contributes to the achievement of the specific objectives of physical education.
3. The learning of basic safety procedures for outdoor living and especially water safety skills.
4. The added facilities requested for the efficient operation of this physical education program open possibilities for a supervised school-community recreation program after school hours.

VII. New problems one can anticipate which should be given careful consideration in implementing the foregoing plans.

A. Lack of available physical education specialists for the elementary level.

B. The preparation in physical education required for an elementary classroom teacher.

C. Who will supervise the after-school recreation program?

D. Interpreting the values of Outdoor Education to the school staff and parents.

SCIENCE

Objective

An understanding of the influence of science on modern living will help to prepare our children for the challenge of tomorrow. The content of elementary science is found in the child's everyday environment -- an environment which is steadily being enlarged by the modern means of communication and transportation. The methods of teaching science require investigation through manipulation, construction, reading, questioning, observation and experimentation. A child needs to develop an effective way of thinking and working at the same time that he is developing an understanding of basic science concepts. Science continues to play an important role in helping a child meet his physical, spiritual and recreational needs.

Characteristics of a Good Science Program

- includes all children
- develops problem-solving skills including scientific attitudes
- provides a balanced science content
- makes provision for a variety of activities
- insures adequate materials, equipment and facilities
- provides consultant or specialist help to each school and teachers
- establishes an on-going evaluation

Trends in Elementary Science Education

- Availability of specialists in elementary science for schools and teachers; one for every 24 teachers.
- Less teacher demonstration and reading of textbook and more toward discussion of problems and finding solutions to them by children.
- Greater use of new media of communication such as television, films and teaching machines.

Classroom organization best suited to carry out the instructional program.

Kindergarten through Grade 3:

- This committee has no organizational pattern to recommend. It was the feeling that science can be taught in any organizational plan adopted for this group.

Grades 4 - 6:

- Grade level teams, approximately 4 professionals, 1 teacher aide and 1 clerk.
- Large, small and individual study pattern.
- Grouping based on ability and interest and not on grade level.
- A teacher with special science training should be on each team.
- A science specialist or consultant should be available to each team.
- Schedule - large group instruction once or twice a week with one or two or three small group sessions.

Dual Progress Plan:

- Specialized science teachers to handle all students
- Grouping based on ability and interest.
- Possibility of combining 2 or 3 classes of similar ability for large group instruction.
- Schedule - students meet daily for 40 or 50 minutes.

II. Activities and teaching methods recommended.

Kindergarten through Grade 3:

- Emphasis on firsthand experiences including the use of live science kits available through the Department of Education Agriculture Department.
- Use of audio-visual tools including educational **television** using both open and closed circuits.
- Use of printed materials for information and ideas.
- Simple construction activities.
- Simple demonstrations by teachers and children.
- Conducting individual, group or class experiments.
- Discussions to ask questions, raise problems, look for solutions of problems raised.

Grades 4 - 6:

Team Teaching:

- Large group instruction through (1) the use of a large room and (2) open and closed circuit television program.
- Possible sub-grouping by ability for differentiated materials and concepts.
- Small group sessions through regular classes for discussions and experimentation.
- Individual study through a special area with science reference materials, experimental facilities, equipment and supplies, study area, storage space for projects, and possibly teaching machines with individualized programs.

Dual Progress Plan:

- No large group instruction is given.
- Sub-grouping of children with similar ability possible if classes are being taught at the same time.
- Audio-visual instruction including television programs can be used.

III. Curriculum Changes Anticipated

- No drastic curriculum change is anticipated. However, pegging of grade level concepts will be kept to a minimum and children should be guided to progress at their own speed. For the better students no ceiling will be placed.

IV. Specialized printed materials and audio-visual equipment requiring classroom space.

- Science models, specimens, charts
- Textbooks, library materials, magazines
- Regular audio-visual equipment including television

V. Materials and equipment which could be shared with other classes.

- Nearly all science equipment and materials can be shared with other classes provided the units are spread out.
- Basic supplies for science experiments should not be shared but kept in the classroom.

VI. Strengths as an outgrowth of the new proposals.

Team Teaching:

- Flexibility of scheduling for large group and small group instruction. Also, ability grouping is possible because all children under a team will be having science experiences at the same time.
- Better opportunities for planning the science program based on the total school program. Correlation of subject matter can be made much more effectively.
- Availability of specialist in science will insure better teaching, better facilities, equipment and materials, and a stronger school science program.
- More variety of activities possible.

Dual Progress Plan:

- More competent teachers in science, more stimulation and interest.
- Better equipped classrooms because they will be specialized and that all classes need not be equipped for science instruction.
- More able to meet needs of children with different abilities.

VII. New problems one can anticipate which should be given careful consideration in implementing the foregoing plans.

Staffing:

- (1) Finding competent teachers with special training and interest in science and (2) establishing a continuous in-service program to improve their subject area competency.

Need for Specialized Facilities and Furniture:

Kindergarten through Grade 3:

- Portable demonstration table for each classroom.
- Movable work counters with storage space below; counters can be

used for individual or group experiments as well as for displays.

- Storage space for regular classroom science supply and equipment.
- Glass enclosed display case for materials not suitable for handling by children.
- Construction or work area with workbench and simple tools.
- Outdoor and indoor areas for planting and caring of animals.
- Darkening facilities for audio-visual presentations and for experiments requiring darkness.
- Closed and open circuit television reception.

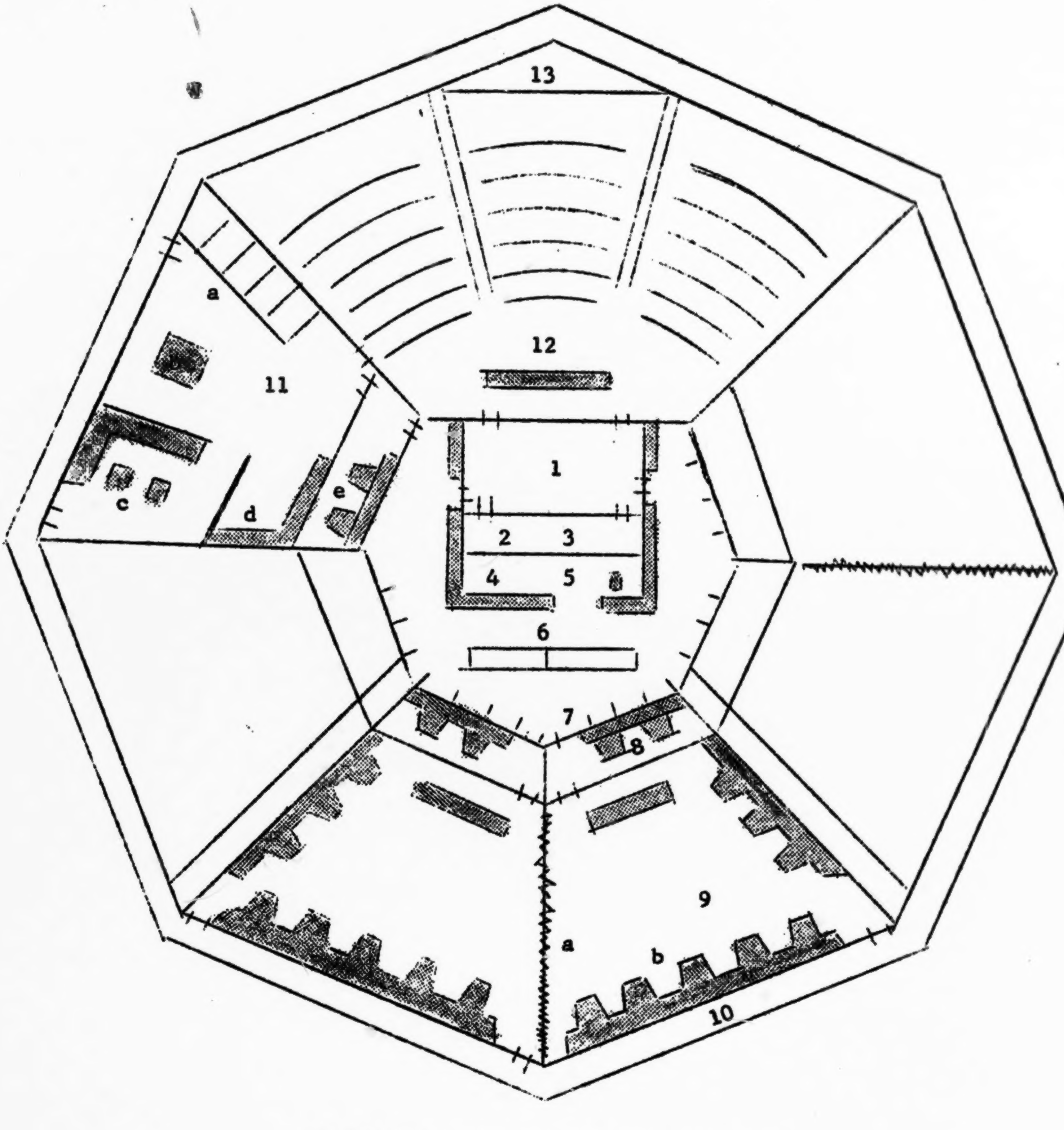
Grades 4 - 6:

Team Teaching:

- Large group instruction room with portable or fixed demonstration table with water, gas and detachable rods.
- Portable demonstration table for each classroom.
- Movable work counters with storage space below.
- Adequate storage for classroom supply and equipment, for long-range projects and exhibits.
- Construction or work area for students with workbench and tools.
- Research area for children -- a separate room equipped with science facilities and equipment for experimentation, science reference materials, storage area for projects, and display area.

Dual Progress Plan:

- All classrooms for science instruction should be clustered in one area.
- One common storeroom for all classes.
- Area for planting and caring of animals.
- Work or construction area with bench and tools.
- Individual study area should be available.



Biological Science Complex (1st Floor)
Physical Science Complex (2nd Floor)

1. General Storeroom (also AV)
2. Closed Circuit TV Studio (darkroom)
3. Construction Room
4. Student Library
5. Storeroom Clerk Office
6. Display Case (portable)
7. Individual Study Area
8. Student Project Room
9. Laboratory Room
   a. Folding Door
   b. Laboratory Tables
10. Corridor
11. Staff Room
    a. Staff Offices
    b. Conference Table
    c. Teacher Aide & Clerk
    d. Professional Library
    e. Research Room
12. Large Group Instruction Room
    Open for Telescopic Work & Weather Instruments (2nd Floor)
13. Projection Room

LIVE SCIENCE

I. Classroom organization best suited to carry out the instructional program.

   a. Building with covered lanai. Lanai to be used to study live science projects.

II. Activities and teaching methods recommended.

   a. Live materials--animals and plants which are provided will be used as teaching aids.

   b. Animals--rabbits, rats, mice, guinea pigs, chicken, ducks, turkeys, canary, mynah bird, fishes, etc., are studied in the classroom.

   c. Plants such as flowering plants, vegetables, house plants, miniature plants, etc., are studied in the classroom.

   d. Bowl garden, dish garden, box garden, container garden are created. Cultural requirement and aesthetic value are studied and appreciated.

   e. Mobile units, stocked with plants and animals are utilized in the study of plants and animals.

   f. Children engage in raising animals and growing plants for specific purpose and period.

   g. Closed circuit may be used under certain conditions.

   h. Demonstrations are given by teacher.

   i. Team teaching will be used under certain situations.

   j. Observation, experimentation reading, keeping records, asking questions, discussion.

III. Curriculum Changes Anticipated

   a. Live science projects will be provided as outlined in the elementary science curriculum.

   b. Correlate science experiences with other school subjects--social studies, reading, health hygiene--(health principles are based on scientific facts). The development of functional understanding of the basic principles of healthful living is one of the major purposes of science teaching.

IV. Specialized printed materials and audio-visual equipment requiring classroom space.

   a. For filing technical information.

   b. Space for live science projects.

   c. Storage space for supplies.

   - d. Electrical outlets for projects.
   - e. Sink, basin, faucets and disposal unit for projects.
   - f. Space and facilities for audio-visual equipment and visual aids--overhead screen and accordian curtain on tracks.
   - g. Bulletin board for pictures, charts and drawings.
   - h. Shelves for collection of plant and animal books.

V. Materials and equipment which could be shared with other classes.

   - a. Live science projects.
   - b. Greenhouses, toolroom and outdoor garden.
   - c. Audio-visual equipment: Slide projector, movie projector, opaque projector, overhead projector, filmstrip projector, models, specimen.
   - d. Soil Storage bins.
   - e. Mobile demonstration and general utility van.
   - f. Rubber wheeled hand carts for distribution of projects within the school.

VI. Strengths as an outgrowth of the new proposals.

   - a. Free the teachers of after school time to locate, create, develop live science projects.
   - b. Encourage the teachers to use live science projects more frequently.
   - c. Give students opportunity to study plants and animal science more effectively.
   - d. Develop and stimulate students' interest in living things.
   - e. Give students an opportunity to conduct experiments--in nutrition growth habits, cultural requirements, insect and disease control, health, and etc.
   - f. Give children an opportunity to develop hobby.
   - g. Help children to carry on creative, self-directed activities.
   - h. Lead pupils to appreciate beauty, design, and color in the natural environment.
   - i. Develop understanding, attitudes and habits necessary for good physical, mental and emotional health and safety.
   - j. Better understanding of the world in which they live.

k. Children learn best through first-hand experiences or actual contact with materials, processes, individuals and the physical environment.

VII. New problems one can anticipate which should be given careful consideration in implementing the foregoing plans.

a. Effective communication among all members conducting this project.

(a) Teachers, principal, travelling science teacher and staff.

b. Plants and animal resource centers should be established with a full-time custodial aide to raise plants and animals.

c. Mobile units with civil service employed driver.

d. Sufficient funds to develop, prepare and maintain the live science program.

SOCIAL STUDIES

I. Classroom organization best suited to carry out the instructional program.

  A. Primary level

    1. Reinforce self-contained classroom with more specialized help from qualified people in different subject areas such as art, music, physical education

    2. Experiment with idea of ungraded primary

    3. Provide time in school day for cooperative planning among teachers

  B. Upper elementary level--team teaching plan

    1. Large group of about 125 pupils per grade level

    2. Five smaller groups of about 25 pupils

    3. Teaching team to consist of
       5 professionals, with one serving as chairman on a rotating basis
       pre-service teachers (intern teachers, practice teachers, observer-participants)
       teacher aides

II. Activities and teaching methods recommended.

  A. Learning activities
  Note: Since this list covers activities from Kindergarten-Grade 6, it is assumed that this list will be used according to the maturity level of pupils.

    1. Planning
       individual work, committee work, total group planning led by teacher

    2. Reading
       books, pamphlets, newspapers, magazines, charts, maps, etc.

    3. Listening
       listening to teacher explanations, assignments, summarizations, etc.
       listening to pupil reports, group discussions
       listening to tapes, recordings

    4. Research
       individual projects
       group projects

5. Watching, observing
    - demonstrations by pupil, teachers, other resource people
    - motion picture films, filmstrips, materials over opaque and overhead projectors
    - maps, charts, etc.

6. Preparing things
    - teacher and pupils will be preparing oral and written reports, maps, charts, graphs, models, displays, etc.

7. Exhibiting
    - art work, maps, charts, graphs, posters, reproductions, booklets and pamphlets prepared by pupils, commercial materials, etc.

8. Reporting, reciting, discussing
    - oral reports, reciting and drilling on basic information discussion on various topics, issues, etc.

9. Learning to master specific skills
    - critical thinking, problem solving
    - evaluating
    - developing vocabulary
    - map reading, globe reading
    - how to use the library
    - how to take notes from a lecture, reading, etc.
    - how to prepare and deliver a report, or to write out a report

10. Gaining knowledge and insight
    - understanding concepts
    - understanding different kinds of sources of information such as readings, radio, pictures, TV, films, music, lectures, etc.
    - drawing relationships between cause and effect, or between different kinds of information
    - drawing generalizations from given facts
    - helping pupils to reflect on their own experiences as a source of facts

11. Learning to work in groups

12. Learning to discover and take social action within the democratic framework of our society
    - what can pupils actually do--having defined a problem?
    - understanding and developing skill in common processes of democratic action

III. Curriculum Changes Anticipated

A. The "near-to-far" concept (home, school, neighborhood, community, state, nation, world continuum), long accepted in Hawaii as well as throughout most of our nation's schools, is now increasingly being questioned.

B. For present purposes, however, it may be best to use the present sequence as outlined in the elementary guide, keeping in mind the areas of emphases in elementary social studies as listed by the U. S. Office of Education:

   Citizenship
   Our American Heritage
   Economic Education
   Conservation Education
   Aviation
   Technological and Social Developments
   Spiritual and Moral Values
   Geographic Understandings
   Current Affairs
   Human Relations
   International Understandings

C. Begin re-examining the present program of studies for K-12 keeping in mind future revisions in this program. Re-examine our broad and more specific objectives, continuity and overlapping of content, provision for greater flexibility in terms of needs and individual differences.

D. Student program for travel and study

1. Purpose

To develop a program that will reinforce and supplement our attempts to help pupils gain an understanding of the cultures and problems of our own state, our country, and other countries of the world.

2. Scope of program

Elementary Level--Grades 5 and 6

Two-way pupil exchanges, to be worked out between interested schools, involving an X number of pupils who would exchange parents, homes, and schools for an X period of time during the school year.

Intermediate Level--Grades 7, 8, 9

a. Two-way pupil exchanges similar to program set-up for Grades 5 and 6.

b. As a part of the summer school program, a course entitled

"Know Your State of Hawaii" could be offered on the regular six-weeks basis. By the time the pupil has finished Grade 8, he will have had the following curricular background in Hawaii:

Grade 4	About one semester on Hawaii Long Ago and Now
Grade 5	Hawaii as a part of the U. S.
Grade 6	Hawaii in relation to the Pacific rim
Grade 8	Hawaii from discovery to statehood

The first three weeks of the course could be a survey-type offering on Hawaii, at the same time focusing attention to the present and foreseeable future. The fourth and fifth weeks can be spent touring the islands. The last week will be spent back in class.

IV. Specialized printed materials and audio-visual equipment requiring classroom space.

A. Social studies room facilities are arranged to provide for a variety of activities:

Large room for large group instruction--speakers, TV, films, etc.
Standard-sized classrooms
Smaller conference rooms for teachers, pupils, parents
Booths for individual activities

B. Standard-sized classrooms are provided with:

Audio-visual facilities--curtains, screens, sufficient electrical outlets
Bulletin boards
Tackboards
Flannel boards
Movable bookshelves, with adjustable shelves (Termite proof)
Air conditioning
Sound-proof construction
Individual table-chair type furniture for regular classroom use
Worktables and chairs (furniture should be termite proof)
Double sinks
Drinking fountain
Filing cabinets and/or storage space containing enclosed, deep, wide shelves
Magazine racks
Exhibit cases
Carpeting or floor covering that is attractive, easy to keep clean
Maps, globes, desk maps, atlases
Reading materials such as basal and supplementary books, newspapers, magazines, pamphlets
Reference materials such as almanacs and encyclopedias
Dictionaries
Basic art supplies

V. Materials and equipment which could be shared with other classes.

Overhead projector
Opaque projector
Movie projector
Filmstrip projector
Tape recorder
Record player
Teaching machines
TV
Films
Filmstrips

Records
Tapes
Rostrum
Public address system
Neck microphones

Mimeograph machines
Ditto machines
Typewriters

Tools for construction work

Pictures--those paralleling most significant aspects of each unit or course of study; reproductions of famous works of art

Models--such as relief maps, models depicting evolution in transportation, etc.

Files on community resources--speakers, field trips, available materials (free, inexpensive, on-loan)

Resource units for teachers

Encyclopedias, almanacs, atlases, dictionaries, and other general references

A wide variety of social studies books in the library covering such subjects as:

Actors and the theater
Animals
Artists
Aviation
Banking
Biography
Business and industry
Children around the world
Chivalry
Circus
City life
Costuming
Crime
Current affairs
Discovery and exploration
Fairy stories
Family living
Farm life
Food
Foreign lands
Friendship
Geography
Government
Hawaiiana

Health
Heroism
History
Hobbies
Holidays
Housing
Humor
Hunting
Immigrants
Indians
Inventions
Isolated peoples
Labor
Making things
Manufacturing
Medicine, Leader in
Migrations
Mining
Money
Musicians
Mystery
Mythology
Patriotic stories
Personal problems

Pioneers
Playing and games
Poetry
Policemen and detectives
Primitive people
School and college
Science, Men of
Sea, Stories of
Small town life
Social problems
Space
Sports
Statesmen
Success, Stories of
Travel
Vacations
Vocations
War
Western life
Wild life
Writers

VI. Strengths as an outgrowth of the new proposals.

A. Vitalization of teaching-learning process so that experiences are more meaningful to pupils

B. Better use of time

C. Better utilization of teacher's strengths

D. Freeing the teacher from routines and other non-professional responsibilities, thus allowing her more time to concentrate on activities requiring professional skill and insights

VII. New problems one can anticipate which should be given careful consideration in implementing your plans.

A. Need for thorough orientation as to the philosophy underlying newer approaches as well as a clear understanding of "new" methodology.

1. Department of Education in-service programs needed

2. U.H. courses (Ed. S782 and Ed. S660 Curriculum Problems for Team Teaching being offered Summer 1961)

B. Need for parental acceptance of program

C. Provision should be made at outset for a planned program of evaluation with ample funds and qualified personnel to carry on necessary research

D. Does team teaching mean a lengthened school day for teachers?

E. Will there be sufficient funds to provide for adequate supplies, equipment, textbooks and supplementary materials?

ADULT EDUCATION IN THE ELEMENTARY SCHOOL (LIMITED USE)

Organization for Learning. The general purpose of the educational program is to provide for every child, youth and adult the kind and amount of education which will:

> "Help him to achieve the best growth of his abilities for useful living."
> "Give him a lasting understanding of our American cultural and spiritual background."

Policy - Physical Environment. School plants should be located, built and equipped to serve children, youth and adults. Important elements to be considered in the setting include:

Campus space
Size and form of the buildings
Size and arrangement of classrooms
Space for auxiliary services
Equipment for all activities

The grade levels to be accommodated and the possible use of the facilities by the community must also enter into the planning. (Ref: Instructional Policies and Implementing Programs for the Public Schools of Hawaii, Pg. 5.00).

Adult Education. Adult Education is an integral part of public education. The Department of Education is authorized to provide increased opportunity for the people of Hawaii, to include a program of less than college grade to be conducted, where feasible, in public school buildings and to use public school equipment. (Ref: Instructional Policies and Implementing Programs for the Public Schools of Hawaii, Pg. 5.02).

Trends. General long-range plans call for "Regional Adult Education Centers" to be developed at Secondary (High) Schools, but some community education needs to be planned for at every school, including the new elementary school.

Courses Offered

1. "Education about education," to keep parents informed as to developments which involve the children in the family and in school.

2. Family life education, to improve parents' vision and skill in implementing the classroom training of children in the home.

3. Civic education, to create greater awareness of parents to their responsibilities for the affairs of the community, not the least of which is "survival" in a troubled world.

Classroom organization. Group instruction for mothers' groups, fathers' groups and/or mixed groups during both daytime and out of school hours will be necessary in the years ahead. Generally these will be small groups (10-20) but some provision needs to be made for large group meetings, when 300 to 400 persons can gather to hear a report, debate a problem, explore a topic or study a school problem.

Methods. Informal, rather than formal instruction will be the predominant approach. Instructional leadership will be divided between the school and the community. All modern teaching tools and techniques need to be available.

Curriculum Changes. Less formalized classroom work. More individual responsibility on the part of the adult student to do research on his own, once directed on the proper procedures.

Specialized Needs. The audio-visual teaching materials prepared for adult use need cabinet space, as do adult library references, texts, course guides, charts, screens, films, etc. All of these equipment needs could be shared with youth activities.

Strengths

1. Close association between parents and school staff will enhance the learning activities of school children.
2. Mutual understanding of the problems of an individual student by teacher and parent will help in the development towards educational objectives.
3. Maintaining an interest of the parents in community problems, the development of school facilities, the support of the educational staff, the capacity to meet, discuss and solve home and school relations problems will be beneficial to the life and growth of the community.
4. Awareness of the adults' responsibility for the betterment of the community (civic affairs, delinquency, school drop-outs, leadership, employment).

Problems

1. Provision for some activities to be carried on during daytime hours, in addition to evening courses.
2. Problem of adult building use; access, restrooms, parking, lighting (interior and exterior), insect control (termite nuisance).
3. Adult registration space, telephone, bulletin boards (traffic control or information center).
4. Plain visible room numbering.
5. Adult furniture flexibility.
6. Work space and storage for making charts, graphs, reports, book storage, equipment storage.

TYPEWRITING

Objective: To enable elementary students to acquire typing
School enrollment: 800 Anticipated enrollment for

	I. Instructions via airborne open-circuit TV or
CLASSROOM ORGANIZATION	
Grade Level	All 6th grade students with at least average reading ability.
Class size	60 students
Staff	One TV studio instructor One classroom teacher for every 30 students At least one clerical aid
Schedule	Daily, 40 minutes First 20 minutes--TV presentation Last 20 minutes--Follow-up by classroom teacher
LEARNING ACTIVITIES	The student will learn to: 1. Use the operative parts of the typewriter 2. Acquire correct techniques of operating the machine 3. Develop skill for speed and accuracy 4. Produce a variety of work on the typewriter
TEACHING METHODS	1. Daily 20-minute instructions to be given by an outstanding studio instructor over airborne open-circuit TV. 2. Class of 60 students to meet in a large group instruction classroom equipped with typewriting tables that tuck away typewriters out of sight when not in use. 3. A classroom teacher will be in charge of every 30 students viewing the lesson. a. She will observe students at work to see that they are using proper techniques and following the instructions of the television teacher.

TYPEWRITING

lementary students to acquire typing skill for personal use

0 Anticipated enrollment for Typewriting: 60--75

borne open-circuit TV or	II. Self-Contained Classroom
ith at least average reading	All 6th grade students with at least average reading ability.
	25 students
every 30 students d	One travelling teacher (who will serve 2 schools) One clerical aid
presentation w-up by classroom teacher	Daily, 40 minutes
o: parts of the typewriter echniques of operating the machine speed and accuracy of work on the typewriter	The student will learn to: 1. Use the operative parts of the typewriter 2. Acquire correct techniques of operating the machine 3. Develop skill for speed and accuracy 4. Produce a variety of work on the typewriter
uctions to be given by an out- nstructor over airborne open- to meet in a large group room equipped with typewriting away typewriters out of sight will be in charge of every 30 the lesson. students at work to see that they techniques and following the the television teacher.	1. Daily 40-minute class to be conducted by a travelling teacher. (She will very likely have about 3 classes.)

	I. Instructions via airborne open-circuit TV or	II. Sel
TEACHING METHODS (Continued)	b. She will also answer student questions. c. After the TV presentation is over, sliding doors or partitions will be drawn to form 2 smaller groups for follow-up activities. The classroom teacher will be responsible for follow-up work, which should provide necessary help for individual differences and a wide range in student ability and achievement. (1) More "paced" drills (2) Further explanations (3) Discussions of errors found in typing assignments (4) Special help for especially slow or fast students and absentees (5) Production typing	
CURRICULUM CHANGES	New Program	New Prog
SPECIALIZED MATERIALS AND EQUIPMENT NEEDED	Four 24" television receivers Screen 70" x 70" Movie projector, 16 mm, sound Tape recorder with headphone listening center attachment (6) Phonograph, four-speed transcription (2) Overhead projector with Tachistoscope attachment Opaque projector Magnetic chalkboards Acoustic ceiling and walls Built-in audio, part of P.A. with jack for tape recorder and phonograph Sufficient outlets on floor and walls for all equipment Bulletin boards Typewriters, electric preferred (64) Typewriting tables (62) Adjustable demonstration stand (2)	Screen, Movie Pr Tape rec ment Phonogra Overhead Opaque p Magnetic Bulletin Acoustic Built-in recor Suffici Typewrit Typewrit Adjustab

borne open-circuit TV or	II. Self-Contained Classroom
wer student questions. entation is over, sliding doors ll be drawn to form 2 smaller -up activities. The classroom esponsible for follow-up work, vide necessary help for individual a wide range in student ability " drills lanations of errors found in typing nts p for especially slow or fast and absentees typing	
	New Program
eivers sound phone listening center attach- transcription (2) Tachistoscope attachment lls P.A. with jack for tape recorder floor and walls for all equipment preferred (64)) on stand (2)	Screen, 70" x 70" Movie Projector, 16 mm, sound Tape recorder with headphone listening center attachment (2) Phonograph, four-speed transcription (1) Overhead projector with Tachistoscope attachment Opaque projector Magnetic chalkboards Bulletin boards Acoustic ceiling and walls Built-in audio, part of P.A. with jack for tape recorder and phonograph Sufficient outlets on floor and walls for all equipment Typewriters, electric preferred (27) Typewriting tables (26) Adjustable demonstration stand (1)

	I. Instructions via airborne open-circuit TV or	II. Sel
EQUIPMENT THAT COULD BE SHARED WITH OTHERS	Everything with the exception of the typewriters	Everythi
POSSIBLE OUTGROWTH OF THIS PROPOSAL	A. Some significant positive effects of the use of the typewriter on the children's achievement: 1. The typewriter will help to increase the pupil's vocabulary and his ability to express. 2. The typewriter will have a positive effect on spelling because of the ease of perceiving errors in misspelled words in the typewritten copy. 3. The typewriter will act as an incentive for more serious efforts to improve handwriting. B. The student can start making practical use of the skill almost immediately.	A. Some typ 1. 2. 3. B. The skil
PROBLEMS THAT SHOULD BE GIVEN CAREFUL CONSIDERATION	A. Staffing B. Cost of equipment C. In-service training	Cost of

borne open-circuit TV or	II. Self-Contained Classroom
tion of the typewriters	Everything with the exception of the typewriters
tive effects of the use of the hildren's achievement: will help to increase the ary and his ability to express. will have a positive effect on e of the ease of perceiving elled words in the typewritten will act as an incentive for forts to improve handwriting. making practical use of the ately.	A. Some significant positive effects of the use of the typewriter on the children's achievement: 1. The typewriter will help to increase the pupil's vocabulary and his ability to express. 2. The typewriter will have a positive effect on spelling because of the ease of perceiving errors in misspelled words in the typewritten copy. 3. The typewriter will act as an incentive for more serious efforts to improve handwriting. B. The student can start making practical use of the skill almost immediately.
	Cost of equipment.

PLEASE NOTE:

For program requirements, furniture and equipment and building standards, please use Educational Specifications for Public School Buildings, Volume I printed in 1959.